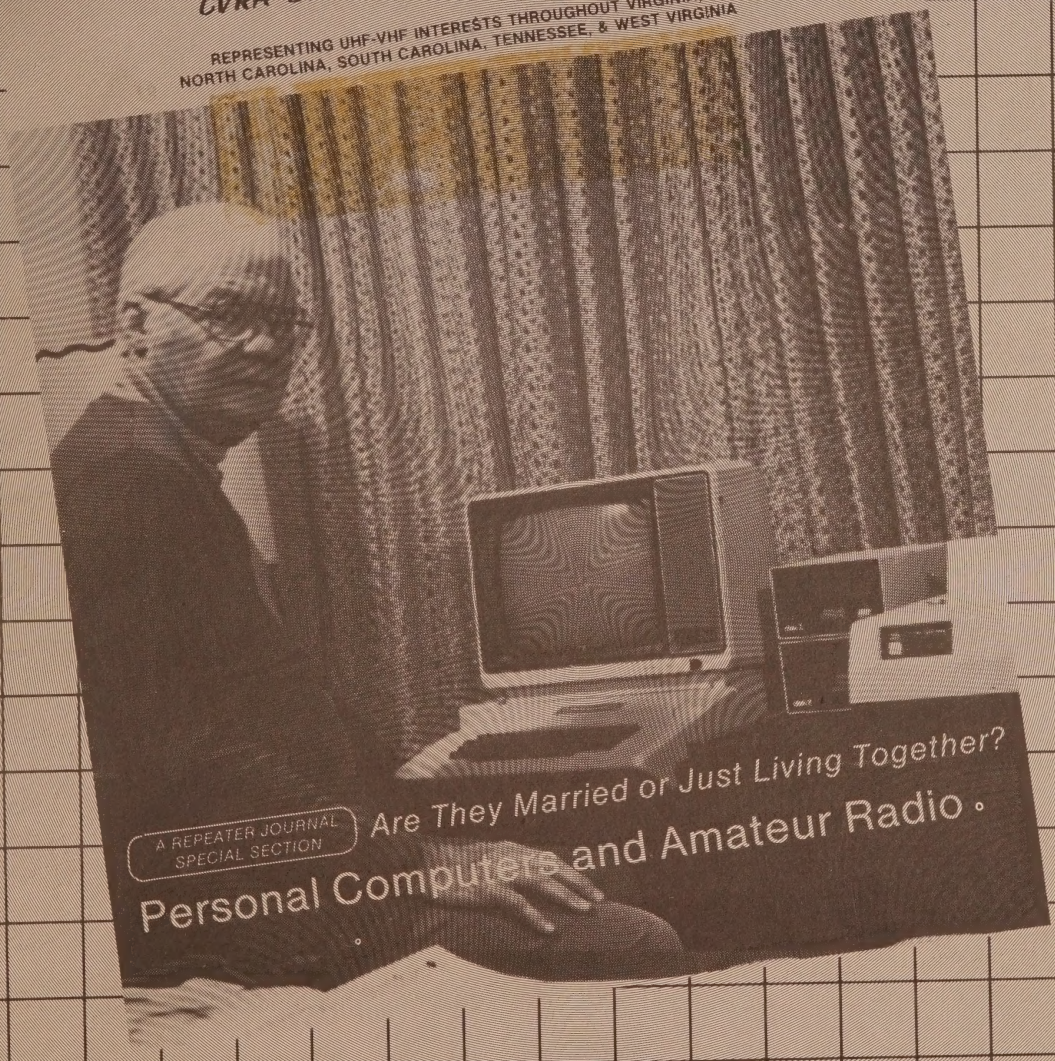
REPEATER JOURNAL

May 1983
1.25

CVRA - SouthEastern Repeater Association, Inc.

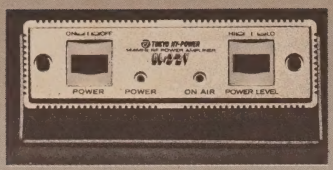
REPRESENTING UHF-VHF INTERESTS THROUGHOUT VIRGINIA, NORTH CAROLINA, SOUTH CAROLINA, TENNESSEE, & WEST VIRGINIA



A REPEATER JOURNAL SPECIAL SECTION

Are They Married or Just Living Together?

Personal Computers and Amateur Radio



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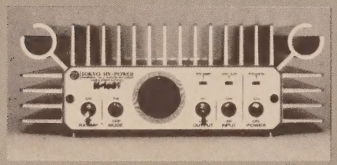

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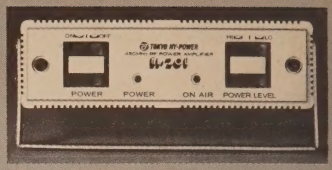

HL-20U UHF AMPLIFIER — This is another super compact from THL, and it's beautiful, with the controls on the brushed metal face panel to make operations as easy as touch and go.

The ultra-compact HL-20U is a basic amplifier for all UHF handheld radios, and it can accept input levels from 200mW to 3W, to provide a big 20W output signal. Fixed antenuator design allows for full output from as low as 200mW drive.

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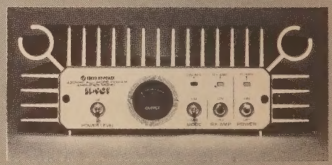

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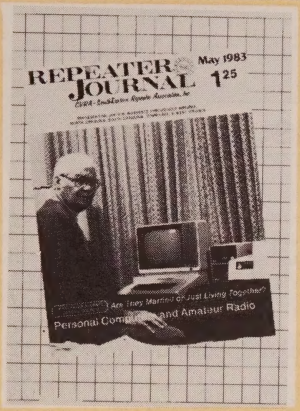

ON OUR COVER

Dick Klavohn, W4OWD of Charlotte, sits with his Apple II Computer System. Dick is like hundreds of other Amateurs who have added a computer the their Amateur radio station. See our story this issue about Amateurs and computers beginning on page 12. Your host, Robert S. Darke, W4MHF will start you at the beginning and with pictures and story show you this wonderful world of computers and what your ham friends are doing with them.

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MAY-JULY, 1983
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"IN OUR 21th YEAR"

Editorial Comment

A Trip Down Nostalgia Lane . . .

I guess all of us can look back on our early days of Amateur radio with fond memories, and often chuckle about how we actually got started. I love to sit and listen to the "Old Timers" tell about their early days of Amateur radio (which were really the early days of Radio).

I was first exposed to ham radio when I was in the Navy on a Destroyer out of Norfolk, Va. in the mid fifties. I had a good friend who was a converted cook to Radioman. He was also a ham.

Phil was sort of a dedicated ham. He talked, lived and ate ham radio and code. I remember his set-up in his old white Cadillac convertible . . . consisting of a home brew transmitter and receiver, a monsterous whip/coil antenna on the trunk, and big speakers on the dash board. Strange, though, there was no microphone. Phil was strictly a CW buff. He had obtained through a flying buddy one of those hand keys pilots used strapped to their leg, and this was what he used. Usually he drove up and down Granby street in Norfolk and worked the world . . . . pounding his key and carefully listening to their code response.

I, being a Radioman on the ship also, naturally could copy code, so I shared many exciting trips with him as we listened and deciphered the QSOs.

In 1957 Phil was transferred off the ship and I lost contact with him, but my nights of listening to amateur radio stuck with me. (To this day, I haven't heard from Phil, W1CMI).

Finally in 1958 my Navy days ended and I came back home to Danville, Va. to settle down. I decided since I had radio and a limited amount of electronics, maybe my future should enclude electronics. I enrolled in the Danville Technical Institute for the 2-year Electronics course.

I was delighted to find out that both my Lab instructors were hams, and my Theory teacher was also a ham. In fact they had an old BC-610 (just like the one we had on the ship) set up in the lab and on light days they would work a couple of contracts for us youngsters.

My interest in ham radio grew and one of the lab instructors said he was going to give some Novice exams, so naturally I studied and went for the exam. It was a Friday that Barney (Mr. Barnett to us students) told me I passed. Meanwhile some of the students decided to go to Winston-Salem, N.C. the next day for exams, so I decided to ride along with them.

Well, that day I took the General test and passed it. While waiting for the other fellows, I decided to take 3rd and 2nd Class Radiotelegraph license, and 3rd and 2nd Radiotelephone. I passed all them. To this day I can never figure why I didn't take the Amateur Advanced class test back when I knew it and could easily pass it.

Weeks later my call came back along with my friends who all passed. Mine was K4MOB. I immediately set out to find some equipment to get on the air. I found an old Heath DX-40 and a Hallicrafters SX-40 receiver and set them up in my bedroom (I should say our bedroom, because somewhere along the line in my studies and work, I had married the gal who waited for me to get out of the Navy). Anyway, I tried for hours to get a contact on 75-meters. Finally in frustration, I called my teacher-friend "Mac" across town and he listened for me. That day I finally had my first on-the-air Amateur contact. "K4MOB this is W4JRR, the handle is Mac."

Days weeks and years passed as I worked AM phone, until finally I scraped enough money together to get my first SSB transceiver. It was then my Amateur days really began. Day after night, night after night, I listened, worked, and tuned.

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MAY-JULY, 1983

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About the Repeater Journal . . .

The CVRA-SERA REPEATER JOURNAL is published quarterly, during the months of February, May, August and November of each year and mailed free to members of CVRA-Southeastern Repeater Association, Inc., a non-profit coordinating organization made up of repeater owners and users. Permission is granted for use of material contained in the REPEATER JOURNAL, provided proper credit is given. The REPEATER JOURNAL Editor will swap newsletters with other Repeater Councils and News organizations on request. The REPEATER JOURNAL press run is 4,500 copies with circulation membership in excess of 3,900 and is entered as Third Class Mail at the Post Office in Greensboro, N.C. REPEATER JOURNAL copies may also be obtained at most area hamfests for $1.25 per copy. All news and Newsletter exchanges should be mailed to the Editor and Publisher, Wayne C. Williams, K4MOB, 600 Lakedale Road, Colfax, N.C. 27235.

About Associate Membership

Repeater users and Amateurs are invited to join CVRA-SERA as Associate Members. A membership fee of $4.00 per year will enable members to support the organization and receive the "Repeater Journal". Note: Associate Membership deadlines are on the 15th of the month preceding months of publication – Jan. 15, April 15, July 15 and October 15. Persons joining or renewing their membership must have their application into the Greensboro Post Office Box by these deadlines to receive the next upcoming Repeater Journal in February, May, August and November. Memberships received after any deadline will not receive the next to be published Journal, but instead will receive the forthcoming issue the next quarter. Memberships received at hamfests will receive a current "Repeater Journal" as long as supplies are available and the next regularly scheduled issue through the mail.

About Full Repeater Membership . . .

Officers and Directors are elected from members of CVRA-SERA Full Membership. Any repeater owner or club may join our organization as a Full Member by filling out an application and submitting it with $8.00 annual membership fee. Two representatives are named for each membership and each receive the "Repeater Journal." The Full Member repeater is appropriately recognized as a full member repeater in our repeater index in the Journal. Full Memberships all expire on December 31 each calendar year.

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About CVRA-SERA . . .

CVRA-Southeastern Repeater Association, Inc. is one of the largest Repeater Organizations in the United States. In our 12th year of operation, the Association is positive proof that coordination efforts have paid off in the Districts it serves. Two of our States are fifth and sixth in the Nation in numbers of Amateur repeaters. Our area is virtually interference free due to cooperation and coordination efforts of our Amateur repeater owners and CVRA-SERA over the past 11 years.

Proper Handling pays off

Cable TV Getting on Your 2-Meters? Communicate and Cooperate First –

—by Wayne C. Williams, K4MOB

We received a letter recently from J. J. Freeman, Engineer-in-Charge, Norfolk Office, FCC. He enclosed a copy of a letter from a cable company in Rocky Mount, N.C., describing their attention to a local amateur who was receiving Channel E interference on 145.25 mhz on his 2-meter transceiver.

The cable company wrote Mr. Freeman: "We talked to Mr. Walter Elliott concerning interference on his Amateur Radio" . . . . . "he was receiving interference on 145.25, the same frequency as Cable Channel E. We called the cable office and had Channel E turned off. The signal on Elliott's radio dropped to zero."

The engineer went on to say that Elliott was a cable subscriber, but the interference was not coming from his connection.

"The next day we proceeded to check the cable around his house with a ComSonics Radiation Sniffer . . . we found and corrected several loose connections on his street, and then checked back with Elliott. The signal level had dropped somewhat, but was still present." The engineer continued: "we continued to check the cable in the direction from which he was receiving the most signal. Several areas away from Elliott's house we found to be radiating. These areas were repaired."

It was noted that after repair, the signal on Elliott's radio was undectable in all directions of his atenna.

The above is a success story. Not all will be so easy, but Amateurs who are experiencing interference from Cable TV have a valid complaint. Cable TV is not supposed to be radiating such that it will interfere with 2-meters at a reasonable distance.

Jerry Freeman, FCC said generally the best policy, if you have Cable interference is to gather information as to where or what direction or what places and frequencies seem to carry the largest amount, document this information and then proceed:

(1) Call the cable company, speak with the Engineer-in-charge and tell him of your problem. If he is receptive, follow up with a letter outlining the problem. Then wait a week or so for an answer or action to delete the problem of interference.

(2) If you don't get satisfaction, write a second letter, describing again the problem, reminding of his promise to help, and a copy of this letter to FCC, being sure to note on his letter that a copy has been sent to FCC. It is also a good idea to send a copy of the letter to the ARRL Communications Department. Then wait a reasonable time for action from the Cable Company, at least another week.

(3) If you get no relief after your second letter, it is now time to take action. Write the FCC Engineer-in-Charge of your district, describe the problem, and steps made toward trying to get it resolved, include copies of letters to the Cable company.

You can now let the FCC handle it. They will write the cable company telling them of the complaint, and will ask that it be checked out, solve the problem, and report back within a reasonable amount of time.

Mr. Freeman said this, in his opinon, was the best way to handle Cable TV problems. The cable people are responsible for keeping leakage under required standards in their system. If interference is evident into the Amateur 2-meter frequencies, they are required to clean up the problem.

Most cable companies are happy to work with Amateurs. A gentlemanly complaint will generally get positive action from them. Only rare instances does the FCC have to enter the picture.

Everhart New ARRL ACC For North Carolina

As the new ARRL Affiliated Club Coordinator (ACC) for North Carolina Section, I would like to hear from any and all radio clubs in the State. I would like to receive your bulletins, newsletters, or any club publicity.

The new ACC program will offer lots of benefits to those clubs who qualify. It is believed that these special service clubs (SSC) will be in the forefront of helping to administer the Amateur radio exams, once the Amateur community is granted permission to give all Amateur exams.

ONLY ARRL affiliated clubs will be eligible to become an SCC - Special Service Club. If you are not an ARRL affiliated club and wish to become one, write me at the address below for an application. I can invision down the road the formation of an Amateur Radio Club Council of NC. Amateur Radio will definitely be changing and affect us all for a long time to come. Let's accept our new responsibilities starting NOW.

Please write me, send newsletters, or any correspondence to:

Rae Everhart, K4SWN, Sec. ACC
Post Office Box 41
Lexington, N.C. 27293-0041

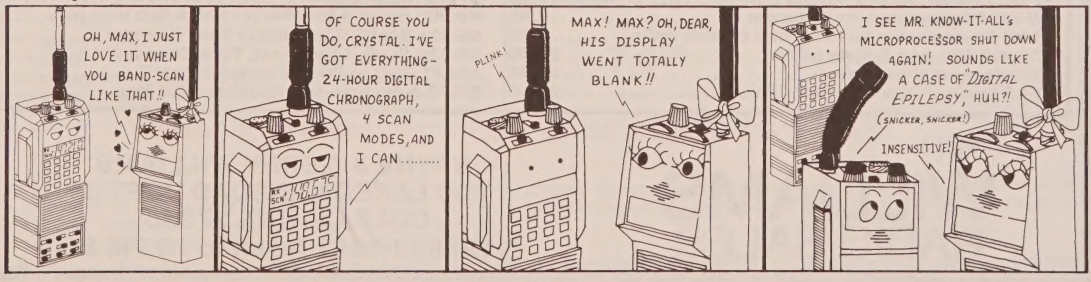
Thank you! If we can be of any service to you, answer any questions or whatever, write us. (Rae Everhart, K4SWN)

Va. Beach To Host '84 ARRL Roanoke Div. Conv.

It was confirmed to the Repeater Journal that the 1984 Roanoke Division ARRL Convention will be held on September 22 & 23, 1984 at Virginia Beach, Va. The League Division Convention will be held in conjunction with the 1984 Tidewater annual Hamfest/Flea Market/Computer Convention.

The Virginia Beach Arts and Conference Center will house the combined shows, the same site which has been host to the Hamfest the past few years.

Stubby *by Fred Hurteau, WD4SKH*


OH, MAX, I JUST LOVE IT WHEN YOU BAND-SCAN LIKE THAT!!
OF COURSE YOU DO, CRYSTAL. I'VE GOT EVERYTHING - 24-HOUR DIGITAL CHRONOGRAPH, 4 SCAN MODES, AND I CAN.....
PLINK!
MAX! MAX? OH, DEAR, HIS DISPLAY WENT TOTALLY BLANK!!
I SEE MR. KNOW-IT-ALL'S MICROPROCESSOR SHUT DOWN AGAIN! SOUNDS LIKE A CASE OF "DIGITAL EPILEPSY", HUH?!
(SNICKER, SNICKER!)
INSENSITIVE!

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ST-500B 500 mah Battery pack	26.50	SS-32B Synth Tone Burst, Tone Encoder	29.95
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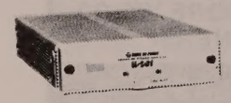

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129.00
List $159.00

In: 3 to 15W
Out: 30 to 80W

Compact 2-meter amplifier covers 144-148 mhz. FM/SSB/CW. Has accurate watt meter, hi/low power output, MOSFET receive preamp. Draws 13A max. Comes with mobile bracket, connector cable.

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279.00
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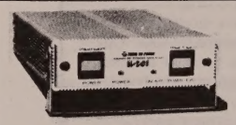
Truly the "Boss Hawg" on the amplifier market. Covers 144-148 Mhz. CW/SSB/FM. Dual level input gives capability of full drive with H/T or with 10-15 watt mobile radio. JFET preamp. Lo/Hi output, accurate watt-meter. Comes with connector cables. Max. current draw 12-23A.

HL-160V/25
Call!

Available Soon
In: 25-30W
Out: 160W

Similar in Design with same output specifications, except input drive will be 25-30w for the higher powered mobile radios. Soon to be Available. Please call for delivery schedules.



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CT-300 - Oilless, air cooled Dummy Load, DC-250 Mhz. 300W Ave	59.00
CT-150 - Oilless, air cooled Dummy Load, DC-150 Mhz. 150W Ave	39.00

Add $2.00 Shipping UPS

KNOXVILLE, TN.—The WA4TEM repeater on subband 73-33 has a new call, WA4YIH. Eddie Woodrick is now responsible for maintenance on the machine, operated by the Knoxville Repeater Group. The machine is located on Sharp's Ridge. (Sam, (WB4HAP)

• • •

ITEM OF INTEREST: ARRL President Vic Clark, W4KFC, reported at the Roanoke Division Convention that the Canadian Digital License is not taking off as anticipated. Only 147 licenses have been issued and half of those were to Amateurs who already had a ham license. This would be the effect should the U.S. follow suit on the no-code license. Since the 90-day extension has been granted, all clubs and individuals should make their feelings known on this important docket. (Rae, K4SWN)

• • •

WILMINGTON, N.C.—A new repeater assignment has been coordinated by CVRA/SERA for Wilmington, on the frequency of 78-18. More info later. (Danny, K4ITL)

• • •

OAK RIDGE, TN.—The 52.64-53.64 WA4YON 6-Meter repeater moves to 52.25-53.25 to escape some intermittent interference on the old input frequency. This repeater also sports a new set of WACOM duplexers in favor of the old split antenna system. The 222.86-224.46 machine at the same site now has a 10-meter remote base tied in. It is controlled up & down by touchtones and also has the capability to change frequencies by remote control. The 96-36 2-meter and 449.6-444.6 machines both have new duplexers. Anybody know a good insurance company? (Sam, WB4HAP)

• • •

LENOIR, N.C.—KN4K, Grant Ayers, and K4HTV, Gary Hartley are working on a 220 repeater for Lenoir. The frequency is 222.56-224.16. (Ken, WA4BVW)

• • •

WHITEVILLE, N.C.—Improvements to the K4MSD 81-21 machine in Whiteville are in progress. Assembly of a new duplexer has been completed and a new site has been procurred. The Whiteville group hopes to have their new repeater on the air soon. (Danny, K4ITL)

• • •

CHILHOWEE MTN., TN.—The K4HXD 52-76-52.525 6-meter machine is temporarily off the air due to loss of a temporary antenna structure. New antennas are in the making while a new mounting is being obtained. The machine may be back on by the time you read this. (Sam, WB4HAP)

• • •

DANVILLE, VA.—The K4WQS 10-70 machine has been off the air for a period due to interference from FM signals. The machine was moved recently from its own tower on White Oak Mtn. North of Danville, to a FM tower at the ridge of White Oak, with hopes of improving coverage. Amos said the move was disappointing in most directions and then the FM interference moved in. Last word they were deciding whether to try to solve the FM problems, or move back to the old location. (Wayne, K4MOB)

District Ramblings

BLOUNTVILLE, TN.—The WB4RAV machine on subband 71-31 is being upgraded. Al Spangler, the machine owner is looking for a duplexer so he can do away with his split antenna system. (Sam, WB4HAP)

• • •

WILMINGTON, N.C.—The WB4UNG, 22-82 repeater is nearing completion. Plans are in the works for placing the machine at the 1900 foot level of the new WWAY-TV tower in early May. This wide-area coverage repeater is supported by the Wilmington VHF Society. (Note: The old tower was ripped down by an airplane last year. The repeater was only on the air at temporary locations with little or no coverage during the period, waiting for the new WWAY tower to be constructed.) (Danny, K4ITL)

• • •

GREENEVILLE, TN.—The subband 81-41 repeater on Viking Mtn. is sporting a new Phelps-Dodge duplexer and Stationmaster antenna. Jack, WB4TUO must have dug up a couple of those mason-jars full of money that he has buried in the garden. (Sam, WB4HAP)

• • •

NASHVILLE, TN.—Tom Park, WD4KWP, of Gallatin, reports interest in CVRA/SERA is building in Middle Tenn/Tennessee FMers. Let's give our new Vice-Director all the support possible in his efforts to create interest in the Nashville area. (Sam, WB4HAP)

• • •

DIRECTORS REMIND: All repeater operators who use control or auxiliary links. Your control system must be identified every 10 minutes (**when** in use), by CW or voice. CW must be no more than 20 w.p.m. The CVRA/SERA Directors still need your control frequencies on file so we don't put someone else on your frequency close by. (Note: A form for filing your control frequency and linking frequency was published in the February Journal, You are urged to send in this form if you have not done so.) (Ken, WA4BVW)

• • •

JOHNSON CITY, TN.—The 99-39 Jonesboro repeater has moved to the coordinated frequency of subband 53-13 and is relocated atop a bank building in Johnson City. The machine has full autopatch capability and is reported doing well in the new location. (Lee, AE4V)

• • •

GRIFTON, N.C.—The W4NBR repeater on 085-685 have improvements planned. The ENC Repeater group is planning to install a new antenna during the Summer. They hope to improve their coverage and to reduce noise problems due to the high RF field on the tower. (Danny, K4ITL)

• • •

KNOXVILLE, TN.—Tim (Yo-Yo) Berry, WB4GBI, has installed a new set of Castors for his repeater cabinet. He wore out the originals from moving it around. It's now on House Mtn. in East Knox county at an elevation of 2,100 AMSL. The GE Master II machine never seemed to work just right until he installed a (ahem!) Motorola Micor preamp. Every machine no matter what brand needs at least one set of batwings. A new 6-cavity Phelps-Dodge duplexer has been added. This boy goes first-class and his machine shows it! (Sam, WB4HAP)

• • •

OLF FORT, N.C.—KA4ROZ, Bud Adams has coordinated a frequency for a new machine at Old Fort. The repeater being constructed will operate on 355-955. (Ken, WA4BVW)

• • •

GREENVILLE, N.C.—The WA4DAN subband 75-35 repeater group in Greenville is installing a new Phelps-Dodge antenna and a new GE receiver in the next month or so. These modifications should improve the 145.35 repeater even more. (Danny, K4ITL)

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Burkett Named Club Amateur of the Year

When members of the Virginia Beach Amateur Radio Club gathered to enjoy their annual Christmas party recently they also honored one of their own. Wally Burkett, WA4KXV, was named as the club's "Amateur of the Year".

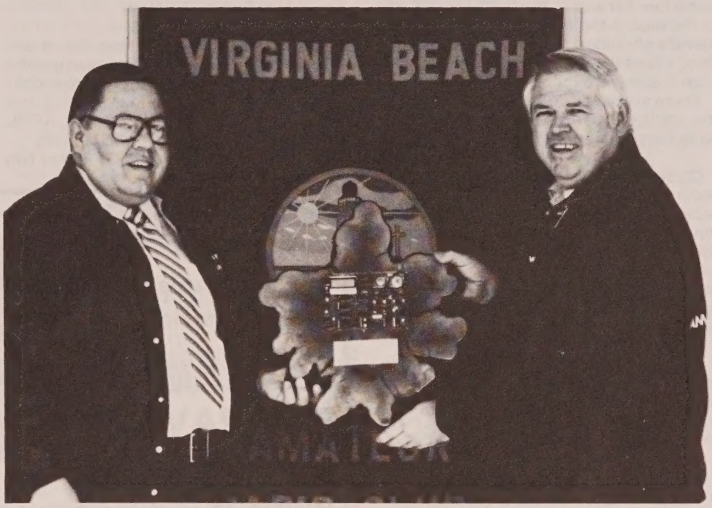
Wally received a one-of-a-kind cypress plaque with a digital clock mounted on it. This award was presented in recognition of WA4KXV's many achievements and contributions in the field of amateur radio and to the community served by the club.

Wally serves as Assistant Emergency Coordinator for the City of Virginia Beach and he is also starting his second term as President of Tidewater Radio Conventions, which sponsors the annual "Amateur Radio - Computer Convention" for the Tidewater, Virginia area.

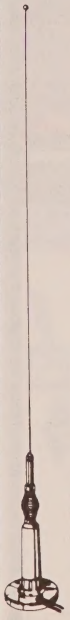
In addition to these duties, Wally is trustee of the 146.37/97 repeater in Virginia Beach. As a result of his repeater activities he has been a member for four years with the CVRA-Southeastern Repeater Association and is now one of its Assistant Directors. He is active in this group's frequency coordination efforts.

Wally was first licensed in 1963 and has remained active since. He has is first repeater (146.34/94) on the air in 1964. For twenty years, Wally's interest and activities have never ceased. In addition to the "official" activities already mentioned, Wally is usually one of the first hams to come forth with an offer of assistance to his brother amateurs. Over the years, WA4KXV has held many positions in the club and is one of our Past Presidents.

The members of the VBARC are proud to have Wally as a very positive example to all hams and are pleased to have been able to honor him as "Amateur of the Year!"



Wally Burkett, WA4KXV receives his one-of-a-kind cypress plaque with digital clock as "Amateur of the Year" in the Virginia Beach ARC. Wally (left), CVRA-SERA Virginia Asst. Director was presented the trophy by Al Crawford, WA4TCJ, President of the Club.



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WEST VIRGINIA NOTES

By: Ted Wolfe, WD4KHL

Despite not working I have traded around and finally acquired my own Vic-20 in March. I borrowed a friend's datasette and have been playing around with the microcomputer in an attempt to become familiar with it. Anything I've written in the past is the result of looking over a friend's shoulder. Now when I write anything about the Vic-20 I'll be able to do so from first-hand experience.

There are over three dozen amateurs in the southern part of the state who now have Vics to play with.

• • •

Clyde Marshall, WD8KOY, has already ordered crystals for his proposed new repeater on Bee Mountain. He's coordinated the 144.53/145.13 frequency for the machine which is a project of active and retired hams who work/worked for the Appalachian Power Company. I'm sure that later Clyde's machine will be listed as a CVRA/SERA member.

• • •

I haven't heard anything further from the Ansted group. They've not gotten back to me since I suggested a couple of frequencies for them to check out from their proposed site.

• • •

The RTTY group at St. Albans will be moving off the 147.96/36 pair because of interference with another in the region in Scioto County, Ohio, on the same pair. St. Albans will move its RTTY machine to 147.975/375.

• • •

The TRS-80 microcomputer door prize at the Fayetteville, WV, hamfest on Feb. 27 was won by Paul Malcomb of Oak Hill. The Vic-20 given away by the sponsoring Plateau Amateur Radio Club was won by David McClure of Beckley.

• • •

With warmer weather here, hams are busy on many weekends taking in nearby hamfests. And in West Virginia we're looking forward to Jackson's Mill on July 2 and 3 when this year's West Virginia ARRL Convention and Hamfest will be held.

To back up a bit for another line or two on microcomputers, I noticed that the FCC approved the use of AMTOR (Amateur Teleprinting Over Radio), effective Feb. 22, with publication of the proposal in the **Federal Register** that day. AMTOR is now legal for U. S. amateurs on 3-to-30 Mhz. If you don't know the difference between plain RTTY and AMTOR, hit the books. **QST** for June, 1981, had an explanatory article. And there are other reference works you can find, I am sure.

In my **Journal** piece in February on Microcomputers I wrote that 1983 is going to be the year that RTTY really takes off. After hams get their feet wet with RTTY they may then go on to AMTOR after learning more about their computers. It is

Continued on Page 32

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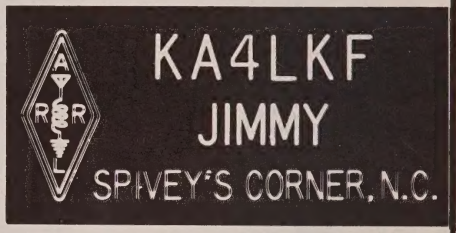

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THE REPEATER JOURNAL

New Cartoon Character For Repeater Journal

We'd like you to meet "Stubby". He's kinda clumsy, klutzy and never gets any respect. The new cartoon strip "Stubby" is being introduced in this issue of the Repeater Journal. He is the brainchild of Fred Hurteau, WD4SKH of Whiteville, N.C.

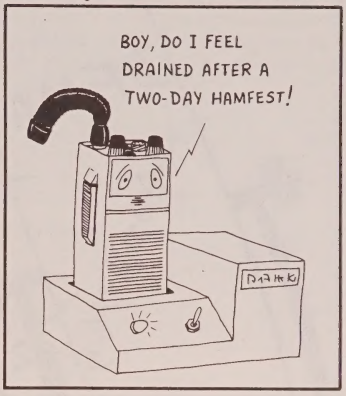
In the strip, Stubby is the main character, described as a crystal controlled, no-frills H/T. Crystal, his secret sweety is also a crystal controlled no frills H/T (of course Crystal is much cuter than Stubby).

Other characters in the strip will be Max, a microprocessor controlled H/T with 5/8-wave antenna and everything. Crystal is sweet on Max – Max is stuck on himself. Finally there is "Synthie," another fully synthesized H/T with at least a touchtone pad and red LED readout. Synthie will be introduced to you in the August issue. She also is stuck on herself, but she and Max do get along since they understand one another and have the same tastes. Both of them snub Crystal and Stubby who are obviously not good enough for them and not in the same "class" you know. Stubby has no time for Max who he quite despises. He'll point out Max's faults and shortcomings in a minute and is quite jealous of Crystal's naive infatuation with Max. Synthie likes to tease Stubby, and Stubby isn't above wagging his tongue at Synthie if she flirts with him a bit.

But wait . . . lets don't tell you too much about our little characters. You read and enjoy them, beginning this issue and in future issues of the Repeater Journal.

(Editor's note) Stubby is the sole ownership of Fred Hurteau, WD4SKH and reprinted in the Repeater Journal with his permission.)

Stubby by Fred Hurteau, WD4SKH



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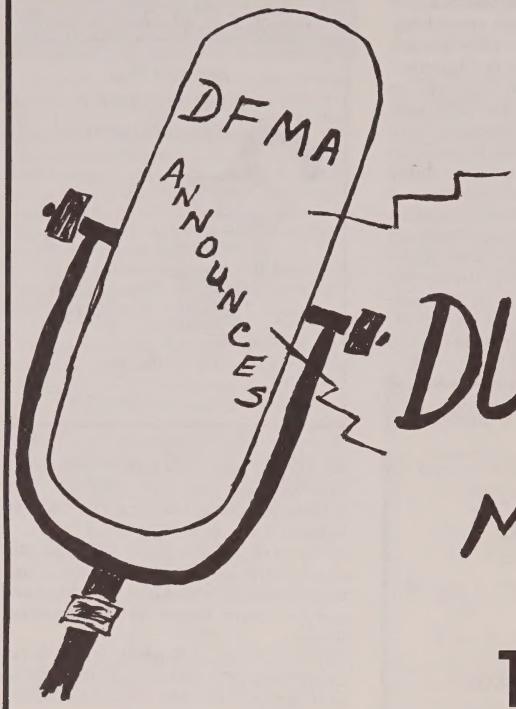

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CAP CADET Gwyn Armfield (KA4SJV) (Left) works with some of his students during the Amateur radio class offered by the Winston-Salem N.C. CAP Squadron recently. The students are Cadets Mark Byerly (KB4DJD), Keith Nelson (KB4DJU), and Maj. William Batts (KB4EAK) (second from left to right).

N.C. CAPers Join The Ranks Of Amateurs

—by Holli Nelson, KB4AKM

The Winston-Salem Squadron of the Civil Air Patrol has enhanced its emergency services communications capability through amateur radio. Eleven of the local CAP communicators are now licensed in the amateur service and eight (8) are active members of the Forsyth County Amateur Radio Emergency Services.

To expand the squadron's amateur base, the Communications Officer, Wayne Byerly, N4BOJ, and four ham/CAP members, Fred L. Horton Jr., NA4P, Holli Nelson, KB4AKM, Boyce Rogers, WB4WOM, and Gwyn Armfield, KA4SJV, teamed up to teach a Novice Amateur License course. Two non-CAPers, Ben Wasilauskas (K4JHS) and John Thompson (KA4YBZ) were added to the instructor team of the course that was offered to CAP members, BSA Explorers, and a few others that happened in. It covered the International Morse Code to 5 words per minute, some radio theory, and FCC rules and regulations.

Completing the course and earning Novice Licenses were CAP members Jack D. Moorefield, KB4DSH, NC Wing Chief of Staff; William E. Batts III, KB4EAK, Winston-Salem Sqdn. Deputy for Cadets; non-member Mike Pifer, KB4DFV and Winston-Salem Cadets, Wayne Greene, KB4DSF, Mark Byerly, KB4DJD, and Keith Nelson, KB4DJU. Marcia Nelson, KB4EDC completed a similar course offered by Missionary Aviation Institute.

Moorefield, now N4INE, and Keith and Marcia Nelson upgraded to Technician and Armfield earned his Amateur General License recently.

Not only are these CAPers in a position to enhance the squadron's communications capability, they have also expanded their own knowledge, capability, and ability to have fun with their two-way radios.

Interestingly, three of the CAP Cadet/Hams are not yet old enough to be licensed CAP Radio operators.

CVRA-SERA Associate Membership Statistics

—by David Ward, KA4LVO

The first quarter activity of 1983 shows that CVRA-SERA associate membership is still in demand. During this period, 148 new members joined the 3025 associate members active as of January 1, 1983 (Active means that dues were paid through this date). In late December, 1982, I mailed out 471 renewal notices for the first quarter of 1983. As of March 31st, 362 of these had renewed. A few calculations with these statistics show about 3064 active associate members as of the beginning of the second quarter of 1983. Compare this to 2835 of this time last year (an 8% increase).

It should be noted that the 3064 figure does not include Full Members, or courtesy members such as Congressmen, Senators, FCC, ARRL, and various other Newsletter and magazine organizations. The overall total membership exceeds 4,000.

District Ramblings

WAXHAW, N.C.—Ron Durrie, WB4OOA plans to keep the 295-895 repeater at his home for local use, due to interference with a Hartwell Georgia repeater which is upside down from his machine, causing machine-to-machine talk. Ron plans another wider coverage repeater on 147.465-146.865. Both repeaters will have autopatches. (Ken, WA4BVW)

• • •

ASHEBORO, N.C.—The 855-255 repeater is getting new GE transmit and receive equipment to improve the repeater quality and reliability. John, WD4IGA, reports that work is in progress on the WD4AIB repeater and may be finished by the time you read this. (Danny, K4ITL)

• • •

A FIRST FOR REPEATERS! A nationwide teleconference by WOTN carried Vic Clark's talk on the Future of Amateur Radio. The 28-88 machine in Raleigh, N.C. carried the entire 1:50 program. It was relayed from Raleigh through Cheraw, S.C., and into the Dillon 145-745 to give coverage into South Carolina. This was the first time that a nationwide conference between cooperating Amateur repeaters was ever attempted. K4ITL reports that he was pleased with the audio quality of the conference and he plans to carry all future conferences. Advance notice will be announced through the Piedmont Coastal Traffic Net (PCTN) and CVRA News nets. (Bill, NT4T)

• • •

MONCKS CORNER, S.C.—The WA4DDK 75-15 machine will soon be a reality. The planned construction of the new machine has probably started and expected to be completed very shortly. (Al, N4EOY)

• • •

GREENSBORO, N.C.—The WA4MSS 16-76 repeater after moving to a new FM tower at Brown Summit (North of Greensboro) now provides excellent coverage to the North, East and South, but tower blockage has severely limited coverage to the West around Winston-Salem. The group has tried several antenna setups, including a beam directed at Winston-Salem, but winds and ice took it down.

• • •

COLUMBIA, S.C.—Al Harney reports the Columbia 220 repeater is now back on the air on Little Mt. near Columbia. The 222.30-223.90 machine sports a new duplexer and has new homebrew transmitter and receiver. The antenna is located on a 100-foot tower on the mountain. The repeater is operated by the Columbia 220 Group. (Al, N4EOY)

• • •

READERS!— Send us your repeater news. A new antenna, a new repeater, a new location, a problem solved, all newsworthy items should be sent to the Repeater Journal editor. This column is dedicated to news about repeaters from Washington, D.C. through Georgia, and from the east coast to Eastern Kentucky. (Editor)

A REPEATER JOURNAL SPECIAL SECTION

Are They Married or Just Living Together?

Personal Computers and Amateur Radio

—by R.S. Darke, W4MHF, Charlotte, N.C.

Ted Wolfe. WD4KHL, in his article "The Micros are Coming On Strong", (Repeater Journal, February 1983) states that "If the situation here in our corner of West Virginia is duplicated at the same rate in the other CVRA/SERA States, then 1983 is going to be the year that RTTY really takes off." On the basis of what we've seen here in the Charlotte, N.C. area, I would venture that that is the understatement of the year!

In recent years, Electronic technology has continued to expand at an ever increasing rate and has impacted every phase of home, personal and social life to a point where affluence is no longer a prerequisite to using this technology; it is beginning to be a way of life in itself. Witness the dedicated automobile computers that display time, speed, fuel rate, estimated time to arrive at destination, temperatures and pressures in the engine, etc., or the burglar alarm system that automatically dials the police when someone breaks in, or the system that programs the temperatures and lights in the house on a random basis. These are examples of customized applications of "Micros" which are evident to anyone, ham or not.

And the art of Amateur radio was not left behind in this revolution. Witness the development over recent years of the fully synthesized "front-end" (Frequency-determining) circuits of transmitters and receivers which in pre "micro" days, required a unique crystal for each frequency on which operation was desired (or a variable frequency oscillator with difficulty-to-obtain stability.

The features this application of "micros" provide include scanning a band, a band segment or preselected "memorized frequencies. The electronic digital technology also made possible, over a greater period, such things as digital volt-ohm-milliamp meters and direct reading digital frequency meters, to say nothing of more recent innovations such as describe digitally controlled antenna rotators. And the list goes on and on.

RTTY Has Existed For A Number of Years.

Radio teletype (RTTY or RATT), as a special form of Amateur radio communications, has existed for many years. It was an evolution of land-line "current-loop" teletype technology used for transmitting messages in typewritten form. It took a big leap forward following WW-II when many teletype machines became available, having been declared "surplus" by the military, Western Union, and Bell Systems and then "terminal units" (demodulators used to convert frequency-shifted tones to DC current pulses) also became available on the surplus market. Still expensive the TU's became the target of Amateur innovation as home-brew construction projects. The advent of transistors, and analog integrated circuit chips (replacing tuned 88mh. chokes with "active" filters) plus other products of the revolution **began** the start of the current RTTY explosion.

HAL Communications, Microlog, and others joined the fray as commercial suppliers of these interfaces essential to successful RTTY communications. They and their competitors became important contributors to the "appliance operator" development as it applied to RTTY.

All of this development of electronic technology, digital circuitry and integrated circuit components of which we have spoken, took place as innovation to accomplish specific functions and tasks. The end results were **dedicated** engineered products. At the same time, however, the transfer of technology from a vacuum tube to a solid state, integrated circuit environment spurned the evolution of programmable computer systems from large multi-rack cabinet, room-filling architecture to table-top and even pocket-sized units. The end results of this particular path were standardized products designed to do any one of a number of functions and tasks, as determined by the user—extremely flexible, and capable of doing most anything. This evolution brought about the **Personal Computer** as a marketable package of microprocessor, integrated circuit "memory" chips and other logic devices, plus a keyboard for manual data entry. TV sets, or CRT monitors are used to display the results. This whole process has introduced a new element to the field — **Software** or **programming** — as opposed to hardware or hardwired circuitry. Without it the computer per se is useless; with it is tremendously powerful and flexible.

There Has Literally Been An "Explosion" of Computers

There has literally been an "explosion" of modern, solid state digitally-controlled radios and accessories in the past ten

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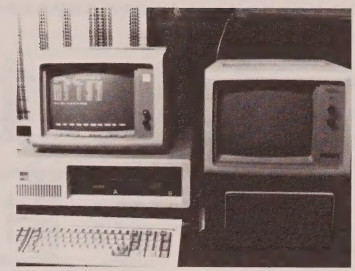
R.S. Darke, W4MHF displays his amateur station. His HF equipment is pictured to the left. His Apple IIe computer system is to the far right.



Jerry Malin, WB2LEI sits in front of his multi-mode IBM Personal computer equipped station. Photo at right shows his IBM installation in a closeup. Below overall view of his HF station position. Jerry is an avid satellite communicator and heavily involved with AMSAT. Yes, he also talks in person sometimes!

years. The most recent products to hit the market include the Heathkit 9000 transceiver and the Yaesu FT980 which offer all of the features anyone can dream of, plus the ability to be controlled remotely from a computer! The explosion in RTTY took on a little different aspect. It seems as though the commercial suppliers carried on their developments utilizing the new techniques to develop better performance, smaller units and lower costs in the terminal units, combining them with keyboards and CRTs to become independent of teletype machines per se. They then began to incorporate flexibility into their offerings, providing many programmable options to the purchaser. In fact, at least two manufacturers in effect sell products as terminal units, that can be used as computers to do all sorts of things.

Meanwhile the personal computers have also exploded. Starting some six or seven years ago with 2 or 3 manufacturers (Apple, TRS-80, and Commodore as the principle ones) they extended an intrusion into the home, already started by the dedicated "video game" products. Touted as being able to keep your Christmas card lists, telephone numbers, do your income taxes and file your receipts, there are now dozens of manufacturers in the personal computer field and more coming every day. They now include such household names as Atari, IBM, TI, Hewlett-Packard and Burroughs. It is only natural that enterprising Amateur radio operators think of innovate and develop applications of personal computers as an important tool for their hobby because this explosion has brought a tremendous drop in price and made personal computers available almost to everyone. Also as more and more Amateurs became interested in computers, developers of "software" came to realize the needs of the hams and another market for their product. In the process the explosion of software — which had started with generalized products for accounting, data base works, word processing, filing, etc. — began to include programs specifically for interfacing the computer with the terminal units.

Another element in this "integrating" process has been the evolution of telecommunications as a **particular** outcome of personal computer technology. Many people use the computers as "smart terminals" to communicate with each other (via telephone lines) and to access any one of many large "data bases" located throughout the county. The "Source", "Compuserve", "Dislog" and the "Dow Jones" services are among the better known, though there are literally hundreds of specialized services available such as stock market, health, engineering and commodities market information data bases. The key to this part of the explosion is the "Modem" — modulator/demodulator — to process AFSK tones on the telephone line, just as the terminal units do for RTTY. If you need to, (and can afford it), you can even access the Western-Union wire service to send telegrams with your personal computer-modern-terminal. Already in at least one area of the country (Knoxville, Tn.) through one of the data bases (compreserve), banking service from one bank has been available from your home computer.

Personal computers, telecommunications, RTTY, Amateur Radio — they all have much in common. We see it on the low-bands. We see it on the high bands — Gosh, computer-controlled (or at least micro-processor controlled) repeaters and linking networks will be commonplace before long. But take note, Computer Clubs, Computer Users groups and supplemental education

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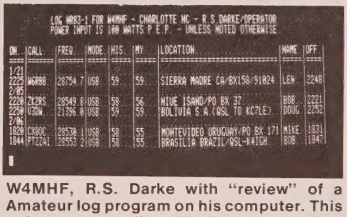
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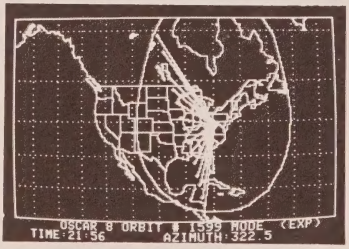
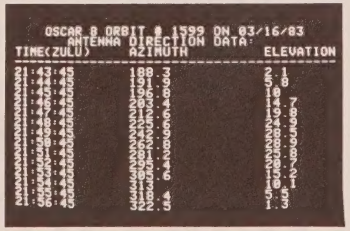
W4MHF, R.S. Darke with "review" of a Amateur log program on his computer. This unique program lists all info needed for logging as well as checking for "dupes".



The Apple IIe computer graphic display of satellite coverage from the "Oscar Pathfinder" program. A graphic visual display of the satellites path is most helpful in plotting the satellite.



Also in Oscar Pathfinder program, a display of antenna headings, elevation and times in Zulu of Oscar satellite passes.

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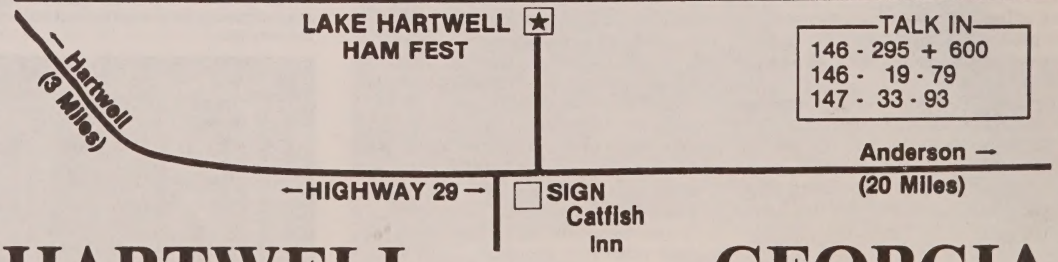


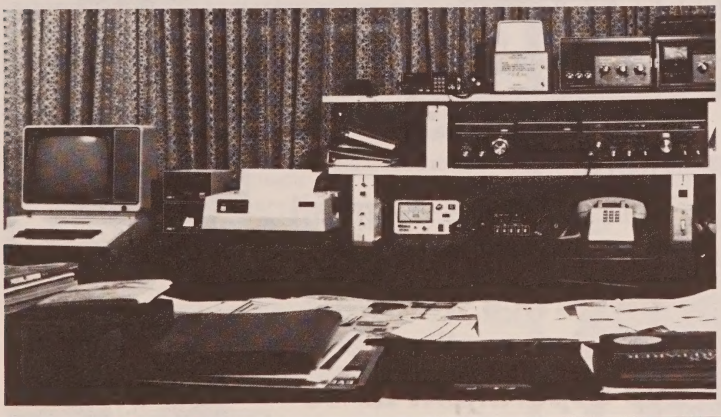
HARTWELL GEORGIA

classes already far outnumber (I'd Wager) successful broadbased Amateur radio groups. In fact their growth has been likened to that of See Bee activity, and in jest, (I hope) the M.A.R.S. Newsletter for March suggested that owners of Apples and Vics might join their brethren on 11 meters!

Recognition of the impact of personal computers on Amateur radio has been taken for the past 2 years by the Mechlenburg ARS in their "Charlottte Hamfest and Computer Fair". Fully 30 to 40 percent of the commercial booth space was occupied by computer manufacturers and dealers. Many of the Amateur radio dealers exhibited and sold computers as well as ham gear. And the number of used computers, terminals, printers and accessories that showed up this year in the flea-market was unbelievable. And truly integrating the effort was Wilton McAllister, WB4PCS, who used his recently acquired TRS-80 Color Computer to program announcements for display on a Color TV on the stage of the show.

Evidence of complete integration of computers and ham-radio comes in a list of "amateur radio software for the Commodore 64 home computer" showing in Long's Electronics most recent catalog — specialized log records with monitor review and print routines. Not only can it keep the records, it can group and reorder them by district, call letters, zones, etc. And perhaps most impressive of all is the automated checking of the entries for "dupes" — a **must** if you're working with a contest log. Of course it can keep a running total of points scored, etc.

Dick Klavohn, W4OWD, of Charlotte, preparing to use his Apple II computer on the MARS RTTY net. Below, his computer system tied into his Amateur radio position for ease of operating either Amateur radio, computer or both merely by rolling his chair to the position he wants to operate.



There are a few other Amateur radio related uses of personal computers. One that has received much attention in industry is "CAD" — the acronym for **computer aided design.** Long's lists a software package for antenna design which not only calculates dimensions, but also illustrates graphically on the monitor, the antenna being designed. When I think of the LC tank circuits, active filters, and other items needing calculation in doing our own ham radio design and construction work, I can only wish I had a personal computer years ago. Unfortunately, when I acquired my first personal computer, an Apple II, almost five years ago, I was well on my way to graduation into the class of "appliance" operator rather than designer and constructor.

Personal Computers Used In Satellite Communications

Perhaps one of the more impressive applications of personal computers to

Continued on Page 17

We offer you something to Place on your computer equipment which might help keep off unwanted hands. It's been around a long time, the author is unknown! (Editor)

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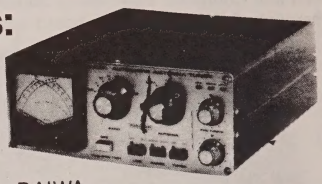
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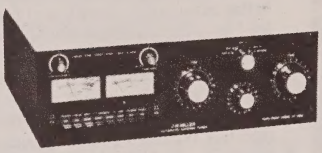
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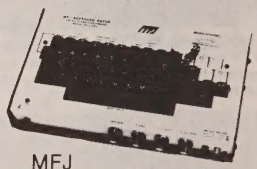
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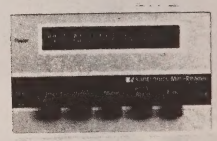
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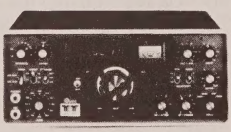
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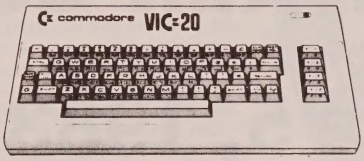

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More Story on Page 19

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ham radio is the use in satellite communications. With appropriate input data supplied by the operator, a program such as the "Oscar Pathfinder" can compute and display elevation and azimuth headings for beams at any location, to point at one of several satellites on a particular day at a particular time. It can display the results on the computer monitor geographically for more complete visual comprehension of the particular orbit involved.

Jerry Malin, WB2LEI, of Charlotte has been involved with Amsat and has been an avid satellite communicator. He uses his own programs on his IBM personal computer (he works for IBM) to help him. If it hasn't already been done, an appropriate project would be to combine a personal computer, an internal time clock and an appropriate interface system to automatically control the beam to follow the satellite through its orbit. What a great "hands-on" construction project!

A list of hams, in Charlotte —or the CVRA/SERA regions, for example — who own personal computers would be monumental to compile, and it wouldn't stay current very long because it's growing as fast as the computer business! It is recognition that the p.c. is an extremely versatile tool that Amateurs can use to expand the scope of their hobby. But many of the hams don't actually use it directly with their rig. What do they do with it, or what can they do with it? I guess we also ought to consider the other members of the family too. For in my case, as long as my XYL can play games on my Apple II and can do some programming, everything is fine. But the effort to relocate the computer in the ham shack for further integration has led to serious consideration of a "his" and "hers" distribution of computer hardware!

Be that as it may, the vast usage of the computer for normal non-Amateur radio, personal needs can serve individuals in many ways. This time of year in particular, brings out the "Form 1040" programs and data which have to the computer enthusiasts, added a degree of **interest** in completing their tax returns, to say the least. And accounting programs abound. A generalilzed set, or specifically customized routines can help any organization "keep the books". We have done this for 4 years for the Mechlenburg ARS (and my wife has done it for her sorority). The data base or file record capability has gotten us to help the club print the mailing labels and keep track of many club and personal activities.

These same functions are extremely useful in handling the myriad details of a

Continued on Page 20

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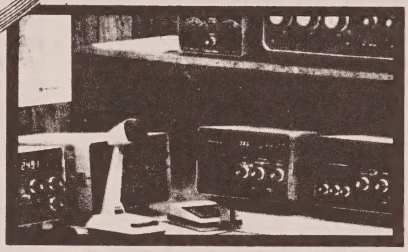
THE IMPORTANT CATALOG FOR THE ACTIVE HAM



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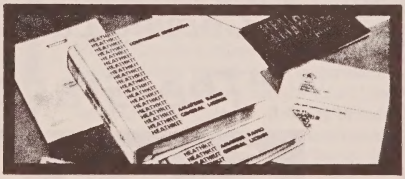

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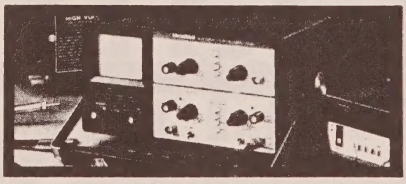

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Griffin Named New S.C. Vice Director

CVRA/SERA President Don Morris and South Carolina Al Harney announces the appointment of Hap Griffin, WA4UMU as South Carolina Vice-Director. Griffin will fill the remaining 18 month term vacated by Garry Barnette.

"Hap is very active in VHF and will do us a good job," said Harney, "We are happy to have him on the team."

Morris said South Carolina needs more good men to help in coordination and communications across the State and felt Griffin is a step in the right direction.

Hap's job will be to assist Al in coordinating new repeaters in South Carolina, monitoring and keeping up with what is happening in his area, and offering the services of CVRA/SERA to repeater owners and users in the area. He will also work closely with Al in soliciting new Full Membership repeaters in the District.

The new Vice-Director may be contacted: HAP GRIFFIN WA4UMU, 20 HARRELL ROAD, SUMTER, S.C. 29150. (803) 773-8275.

Amateurs & Computers

function such as those for a hamfest. Compilation of pre-registration lists, mailing labels, exhibit booth assignments, billing and summaries, to say nothing of providing a valuable vehicle for a final report. A word processor, text editor, with the appropriate printer output for the computer is perhaps the most useful "accessory" or peripheral for a p.c.

Computers - The Greatest Time Wasters since Amateur Radio

There are two other elements that draw computer enthusiasts and Amateur radio operators together—they are **time** and money. While the "explosion" that is taking place is bringing down the cost (yes, even computer dealers have been known to offer discounts -- if not, you might buy it at K-Mart), the want list of features and accessories grows just as for the ham. It used to be said that ham radio took too much time from other personal activities (according to my family), but little did they know how the hours can disappear while trying to program a computer or customize an application routine! I believe the computer, for all of its time-saving and effort-saving potential, is the greatest time waster ever invented since ham radio!

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SHELBY N. C. HAMFEST

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CLEVELAND COUNTY FAIRGROUNDS East of Shelby

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Reserve your Labor Day Weekend To Spend With Your Friends At Shelby Hamfest!

Full Details in August Repeater Journal, Or advance information Write:
Betty Switzer, N4BCN, P.O. Box 2206, Shelby, N.C. 28150.

John Ross ARC To Hold Trade Fest & Flea Market

The John Ross Amateur Radio Club is sponsoring their 1st annual Trade Fest and Flea Market July 9 & 10, 1983 at the Rossville Civic Center, Rossville, Georgia. Center will be open to exhibitors July 8, 5 – 10 pm for the purpose of setting up displays. Free admission, main and hourly door prizes will be featured. For further information contact Murel Winans, (615) 867-7739 or write: John Ross A.R.C., P.O. Box 853, Rossville, Georgia 30741. We are looking forward to seeing "ya'll" in July, and your attendance will be appreciated.

Charlotte Changes Their Repeaters

—by Jerry Malin, WB2LEI/4

The Mecklenburg Amateur Radio Society is pleased to announce that their repeaters are now in new locations. The W4BFB/R repeater on 145.23 is now located at the 1000 foot level of the WPCQ transmitting antenna. The machine is now offering wide area coverage to the East of the Charlotte area. Base stations from the Winston-Salem area check in regularly, and mobiles work the repeater beyond Ashboro. The club will be fine tuning the pattern to increase the coverage to the West. Coverage North and South has been increased also. Stations are invited to use the machine.

The WR4AUE repeater on 146.94 has been moved to Uptown Charlotte. We are waiting for an opening to become available on the roof of one of the taller skyscrapers. This repeater will cover the local area, and from experiments run with the 145.23 repeater when it was in various locations in the Uptown area, we expect excellent coverage up and down I-77 and I-85. The 146.94 machine should provide coverage from Rock Hill to Statesville and from the South Carolina border to China Grove, when it gets to its final location. The 146.94 repeater still has an open autopatch.

For the RTTY enthusiests, we now have a repeater reserved for ASCII or BAUDOT on 146.775. The repeater is currently located at the home of W4PPN on the East side of Charlotte. We are in the process of finding a better location for it. We eventually hope to establish a mail box type service on this repeater.

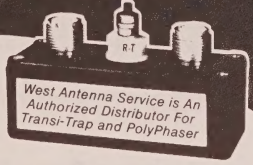
The Mecklenburg Amateur Radio Society invites all radio amateurs to feel free to use our repeaters. We hope that the new locations better serve the radio public, and we will be striving to continue to make improvements to our repeater systems.

Piedmont Area N.C. Talking About Triad Chapter QCWA

Several people in the Triad area of North Carolina (Greensboro, Winston-Salem, High Point) have expressed an interest in the formation of a Triad Chapter of QCWA (Quarter Century Wireless Association). Anyone Amateur licensed 25 years ago or more is eligible to join. That's 1958 or earlier.

If you are eligible and interested in forming such a local chapter in the surrounding Piedmont area of North Carolina, contact me and let's get one started. I can furnish you with membership and charter applications. Write: **Rae Everhart, K4SWN, P.O. Box 41, Lexington, N.C. 27293-0041.**

TRANSI-TRAP Lightning & Static Protectors



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Models Available: (50 ohms, 200 W models are most sensitive, best for RCVRS and XCVR's. 2 kW models designed for amps. All models include Arc-Plug cartridge.)

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Model LT Protector, UHF-type "T" connector handles 200 W output thru 2 meters $19.95

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Replacement Arc-Plug Cartridges for Models LT $9.95, R-T $9.95, HV $12.95

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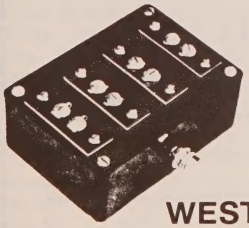
LOCAL CALL 621-2473

PolyPhaser Corporation



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Wayne & Gerry
WILLIAMS RADIO SALES

HAM FAMILIES

Many families have more than one amateur member. Out of curiosity I began keeping a list a few months back to collect the names and calls of those hams in such family units. This article doesn't claim to list them all, just the ones of which I am aware of in the area. In most cases I've personally talked with one or more of the hams in the family unit and that is the way I built up my list.

Karl Thompson, K8KT, the ARRL Section Manager for West Virginia, is married to Becky, K8KT, and they live in Kanawha county. One parent of each is also a ham. Karl's mother, Ethel, WB8YST, lives in Wyoming county while Becky's mother, Reba, WD8CHD, lives in Boone County.

Then there's Jack Kibler, K8WMX, and his wife, Vivian, WA8OKG, of St. Albans and their son, Doug, WA8AZI, of Nitro. R. L. Monore, W8WHQ, South Charleston, has a wife, Louise, who is licensed as N8BTT. Their daughter, Leola, K8NBN, is married to Kenna S. Ray, WD8CME, of South Charleston.

Other couples in which both are hams: Bill, K8BS, and Betty, KA8MLP, Hunter, Charleston; Bill, KB8ZM, and Betty, KA8MFH, Pace, Charleston: Jeff, N8DTN, and Tina, KC8FA, Clark, Charleston; Dale, K8KW, and Linda, KA8QYK, Grimmett, Charleston; Leon, WD8POF, and Carol, WD8RCV, Moten of Jumping Branch in Summers County; Pete, W8PV, and Rose, K8YL, Victor of Shinnston; and Joe, KA8IBO, and Denise, KA8LSF, Roberts of Oak Hill and Denise's father, Jobill Campbell, KA8CGU, Lansing, all in Fayette County.

Randy Cowles, WA8IWZ, Charleston, and his teen-age son, Jerry, KA8HAS, and Don William, WA4K, Bluefield, Va., and his teen-age son, Mark, N4HYN.

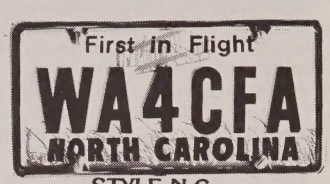
Rick Gillespie, KC8BQ, Charleston, and his brother, Steve, KC8FA. Another brother, Danny, a Dunbar policeman, is KA8MYB.

Shirley White, KD4HB, Rock Spring, SC, and his brother, Garry, WD8OMB, Scott Depot, WV, and Garry's wife, Sharon, WD8OLI.

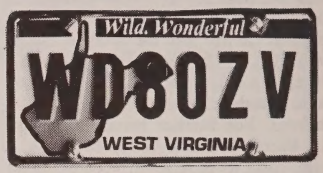
Bill Cowell, WB8YJJ, from near Richwood and his son, Eric (an 11-year old), KA8QAU. Bill's wife Pam is also licensed but I can't find any record of her call in my notes.

I hope I haven't left any of my acquaintances out as I wouldn't want them angry with me for overlooking them. Chances are that you could start such a list and be surprised at how many of the hams you know have more than one licensed operator within the family unit. I wonder if any of you know of a family group with more than four hams in the immediate unit in your area. — *Ted Wolfe, WD4KHL*

New! PERSONALIZED LICENSE PLATES
Now You Can Display Your Call On Your Car



STYLE N.C.



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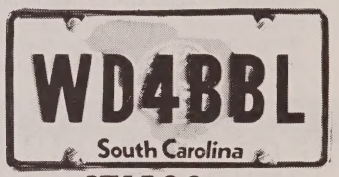

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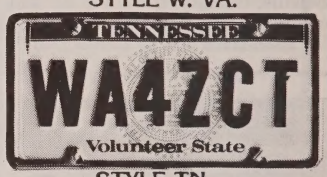

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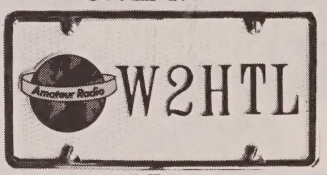

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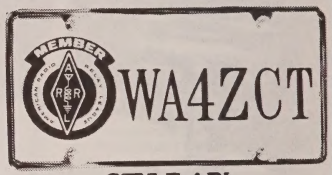

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Each License plate is, as nearly as possible, a replica of the state issued plate right down to the colors! But - in place of the call you put MOM or DAD or the name of a **FRIEND** and give it as a gift or put your club name on the tag and give it as a door prize!

Fill in form below and mail with your CHECK or MONEY ORDER TO:
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COPY: (Max. 7 Characters) ☐☐☐☐☐☐☐

NAME _____

ADDRESS _____

CITY & STATE _____

ZIP _____

PLEASE PRINT CLEARLY RJ: 5

The Tennessee Council of Amateur Radio Clubs

—Lee Campbell, AE4V, Jonesboro, Tn.

The Tennessee Council of Amateur Radio Clubs (TCOARC) was formed about 30 years ago. It was formed by some interested Hams that cannot be recalled at this time, although it is possible Bill Scott, W4UVP and Dave Gaggis, W4OGG were around at that time and may have had some part in the Council's formation. John Hawkins, W4TYV, a good friend in Kingsport has some recollections about the organization.

The TCOARC has weathered many years and is still an active organization. Last year the council had its annual meeting at the Oak Ridge Hamfest and elected the current officers: O.D. Keaton, WA4GLS, Chairman; Alan (Lee) Campbell, AE4V, Vice-Chairman and Jean Giesler, W4TYU, Secretary-Treasurer. These offices require a lot of hours and work and these individuals desire and need all the help they can get.

Understanding the TCOARC

This organization was organized to enhance relations between all the radio Amateurs and Clubs throughout Tennessee. It is doing this function in the form of passing communications between hams and clubs throughout the State by means of a net. This net replaces the regular Tennessee Phone Nat on Sunday evenings at 7:30 p.m. EST (0030Z) and is called only on Sundays. The regular Tennessee Phone net occupies the other 6 days. The frequency is 3980 Khz. or very near. The net is an ARRL sanctioned and all Amateurs are invited to check in and participate. You do not have to be a member of the TCOARC to check in.

The TCOARC sponsors such activities as the Tennessee State QSO Party each year as well as other interests brought before the Council. The Sunday net also acts as a block to try to voice the opinions of hams throughout the state.

Any Amateurs with any knowledge of club activities in their area, such as meetings, transmitter hunts, hamfests, swapfests, etc., bring them to the net and pass the word to all your neighbors.

The TCOARC is planning to expand into the following areas in the future: (1) Provide a non-profit mailing permit for the member clubs. (2) Assist clubs in obtaining program materials. (3) Provide liaison between clubs and other agencies such as ARRL, FCC, etc. (4) Assist in promoting, organizing and holding hamfests and other activities. (5) Provide a periodic newsletter to member clubs.

Any Tennesse Amateur Club who would like further information concerning the TCOARC is invited to contact the Secretary-Treasurer, Jean Geisler, W4TYU at 4544 Lyons View Pike, Knoxville, Tn. 37919.

Another 220 Mhz Repeater Planned In NC At Lenoir

Plans for a 220 mhz repeater for the Lenoir area have been discussed for over a year. Now the plans are being put into reality. NN4K, Bud Ayers; K4HTV, Gary Hartley; and N4AVU, Duane Ayers, are in the process of constructing the new 220 machine.

The operating frequency coordinated by CVRA-SERA is 222.56-224.16. A Midland 13-509 has been purchased for conversion to repeater operation. The machine will be located on top of Hibriten Mt., 2.7 miles NE of Lenoir.

The wiring, rewiring, soldering, and testing is well underway and plans are hopefully to have the machine operation sometime this month. (Gary Hartley, K4HTV)

District Ramblings

KNOXVILLE, TN.—The Radio Amateur Club of Knoxville (RACK) has a new technical committee made up of three club members. They are: Gene Geisler, W4TYU, Ray Adams, N4BAQ, and "Doc" Gilmore, WA4MCX. This group is responsible for maintaining the 90-30 W4BBB machine on Chilhowee Mtn. (Sam, WB4HAP)

• • •

LAFOLLETTE, TN.—The W4TZG 07-67 machine is sporting some new Spectrum equipment and is operating quite well. The new equipment was installed by the skillful hands of Jerry Sharp, W4BGW and Ray Burns, W4TZG. The machine operated by the Walnut Mtn. ARC is soon to have an autopatch. (Sam, WB4HAP)

• • •

CHATTANOOGA, TN.—The 449.10-444.10 machine has reappeared under the call WA4NFO. After being off for several years, Tom, K4VCM and Greg, WA4NFO revitalized the original Motorola tube gear and it's up and running. Last time I saw Tom he was looking for some good 2C39's. The machine is operated under the CTSFMA and is on Signal Mtn. (Sam, WB4HAP)

• • •

SOUTH BOSTON, VA.—Harvey Heath, WD4LBM has a repeater going in the South Boston area again. The machine on 46-06 fills a gap in that area of Highway 58, about 30 miles East of Danville. (Mbrship File)

• • •

HAMPTON VA.—The 448.65-443.65 K4UMI repeater is back in service after being off the air for 5 years. Also in HAMPTON—a Packet repeater is on 145.23. The Packet machine, the 440 mhz and the 34-94 2-meter machine are all operated by the Peninsula Emergency ARS, K4UMI is trustee. (Wally, WA4KXV)

• • •

CHESAPEAKE, VA.—The 01-61 Chesapeake repeater is now in operation serving the Tidewater. The trustee is Art, N4GFP. The machine is owned by Chesapeake Civil Defense. (Wally, WA4KXV)

• • •

VIRGINIA BEACH, VA.—The 37-97 WA4KXV repeater has a new sound. A RC-850 controller was installed on a Motorola T73MHB repeater. The RC-850 made by Advanced Computer Controls has 7 voice IDs with a 200 word vocabulary. The controler is one of the most modern and up-to-date computer systems with all the bells and whistles. New software is presently being written to add functions. A voting comparater and a second receiver has been added to help portable operation. The repeater is open 24 hours. The emergency autopatch is operated by ★ (Star) - 0, which automatically dials 911 for Police and Fire with # (Pound) to turn off patch. The normal autopatch is only available to Virginia Beach Emergency Amateur Repeater Society Members. (Wally, WA4KXV)

• • •

KNOXVILLE, TN.—The 675-075 K4HXD autopatch machine on Beaver Ridge has a new Super Stationmaster and ½-inch Heliax. The patch is tied to a different phone exchange now and reliability in dialing is greatly improved. The machine now at it's fullest potential is working extremely well. (Sam, WB4HAP)

Is this new KDK FM2030 the best 2 meter FM radio in the world?

KDK

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SIX IN ONE CONTROL:

A multi-function triple switch with co-axial knobs to:

1. Dial frequencies,
2. Select memories, LED display shows memory numbers,
3. Select memories, display shows memory frequency,
4. Select CALL memory,
5. RIT control in 1KHz increments, and
6. Memory WRITE by pushing on DIAL knob.

Easy to use rotary pulse switch. To dial frequencies, set FUNCTION ring to DIAL position. Switch click stopped to permit counting frequency steps as dial is turned. Electronic alarm sounds out when lowest or highest frequency is reached. Transcriver stays at this frequency and alarm continues to beep with each further click of the dial. This, combined with SPEED button, which speeds up dialing to 100KHz steps, permits a complete "blind-fold" operation which is unique to the KDK design.

To select memories, set FUNCTION wing to M-CH or M-FR. Rig will again beep when lowest or highest channel is selected making the FM-2030 as easy to use as a 12 channel crystal transcriver. 10 memories plus CALL plus DIAL; full back-up of all these including the last frequency dialed with built-in NICAD battery which will hold memories for more than a year.

DIAL knob becomes RIT control when RIT button engaged. Shifts receiver frequency in 1KHz steps. Operates in DIAL, M-FR and CALL functions. Auto reset to center by shifting FUNCTION ring to adjacent position and returning to its original position.

SIMPLE SCAN CONTROL:

FUNCTION ring selects type of scanning as follows:

DIAL . . . Band scanning. Limits, memories 5 & 10.
M-CH . . . Memory scanning. Channel Nos. displayed.
M-FR . . . Memory scanning. Frequencies displayed.

Just set SCAN switch to BUSY to find a busy channel and OPEN to find a vacant channel. When located, flick switch to center (-) position and start transmitting.

HI/LO POWER BUTTON:

HI – 25 watts; LO – 5 watts.

REVERSE BUTTON:

Use to monitor transmit frequency (Repeator input) during duplex operations. Functional for duplex using memories (A x B mode) and offset switch. Also functions during RIT use.

COMBINATION SQUELCH AND REPEATOR OFFSET CONTROL:

Black knob controls squelch. Silver ring sets operating mode, simplex or duplex, plus and minus.

– . . . Transmit 600KHz below receive frequency.
S . . . Simplex. Transmit and receive on same frequency.
+ . . . Transmit 600KHz above receive frequency.

NOTE: Full frequency readout of transmit and receive frequencies. Display auto-switched by P/T switch.

COMBINATION VOLUME CONTROL, POWER AND MEMORY MODE SWITCH:

Black knob controls volume. Push ON, push OFF power switch leaves volume setting unchanged. No need to re-set volume level each time transceiver is switched on. Silver ring sets memory modes as follows:

A + B . . . Select and scan 10 memories, 1 – 10.
A . . . Select and scan 5 memories, 1 – 5.
B . . . Select and scan 5 memories, 6 – 10.
A x B . . . Duplex using memories. Receive on memories 1 – 5 and transmit on memories 6 – 10. Scan 5 memories, 1 – 5.

GENERAL:

Another Super-receiver from KDK. Improved front end with high Q coils with traditional KDK pioneered electronic auto-tuning using varicaps to cover the wide bandwidth with constant sensitivity and selectivity. A matched pair of monolithic 2 pole crystal filters in the 1st 1F for improved adjacent channel and out of band signal rejection. Super sensitive and smooth acting squelch. Discriminator center detector to insure band scanning stops only at true center of channel even when scanning in 5KHz steps.

Another super-clean transmitter with crystal clear modulation. Electronic auto-tuning of transmitter exciter stage to insure a clean, spur-free output.

New fast acting PLL permits scanning at one of the fastest scanning rates in the industry.

Dialing and scanning steps. offset frequency and high and low frequency band edges can be reprogrammed by simple diode changes on a new plug in initialization module.

Plug in tone encoder module is included for CTCSS.

KDK

SPECIFICATIONS – KDK FM-2030 TRANSCEIVER

1. GENERAL

Semi-conductors	FET x 6, TR x 29 (30), IC x 16 (17), Diode x 51 (52)
Dialing steps	5KHz (12.5KHz) per click, 20 clicks per revolution (100KHz SPD engaged)
Memory Channels	11 (A = 1 – 5, B = 6 – 10, + Call Channel)
Memory Scanning	Selectable, A + B = 1 – 10, A = 1 – 5, B = 6 – 10, A x B = 1 – 5
Band Scanning	Programmable, limits set by frequencies in memories 5 and 10
Band scan steps	Same as dialing steps
Type of Emission	F3
Antenna Impedance	50 ohms nominal, unbalanced feed
Power Supply	13.8 volts, ±10%, negative ground
Current Consumption	Receive: Standby .3A, maximum volume .6A Transmit: 6A 25 watts, 3A 5 watts
Dimensions	55h x 162w x 182d (mm) protruding items not included
Shipping Dimensions & wt:	100h x 210w x 320d, 1.7gs transceiver only, 2.4Kgs shipping weight

2. TRANSMITTER

Frequency Coverage	143.005 – 148.995MHz (144.0125 – 145.9875MHz)
Output power	25 watts (HIGH), 5 watts (LOW)
Modulation	Variable reactance frequency modulation
Maximum Deviation	±5KHz
Spurious Emissions	Better than –60dB to carrier
Repeator Offset	±600KHz, diode matrix programmable
Repeator Tones	100Hz adjustable, (175OHz crystal controlled tone burst)

3. RECEIVER

Frequency Coverage	143.000 – 149.000MHz (144.000 – 149.000MHz)
Receiver type	Double superheterodyne
RIT	1KHz steps, functional dialing, memory and CALL channel
Reverse	Push button monitoring of duplex transmitting frequency
Intermediate Frequencies	1st = 10.7MHz, 2nd = 455KHz
Sensitivity	S/N better than 35dB at 1uV input, better than .2uV 12dB SINAD
Squelch Sensitivity	Better than .15uV
Bandwidth	6KHz, –6dB
Selectivity	±16KHz, –60dB
Image Ratio	Better than 70dB
Audio Output	More than 1.5 watts, THD 10% at 8 ohms

4. STANDARD ACCESSORIES INCLUDED

Microphone	Handheld dynamic, 500 ohms with U/D and tone encoder buttons
Power Cable	With 2 conductor metal connector and fuse holder
Spare Fuse	1 piece, 7A
External speaker plug	1 piece, miniature phone plug type
Mobile mounting bracket	1 piece, black
Mounting hardware	4 pieces, 4 x 10mm self tapping screws 4 pieces, plain washers 2 pieces, thumbscrews for transceiver mounting in bracket 1 set, microphone clip with mounting screws
Instruction Manual	Includes circuit diagram (fold-in)

NOTE: A receiver spur maybe noted at 144.000MHz due to harmonic of 9MHz frequency standard.
Figures in parenthesis for E version for sale in European countries.

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	RALEIGH	NC
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	PIE HORSE MT	WV
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	BRISTOL	TN
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	ATHENS	TN
	BLOUNTVILLE	TN
4.71 /5.31	LAYLAND/MANN MT	WV
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	GREENEVILLE	TN
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4.83 /5.43	KENNESAW	GA
	MACON	GA
	FAYETTEVILLE	NC
	NEWTON	NC
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	KNOXVILLE	TN
	NASHVILLE	TN
	GALAX	VA
	RICHMOND	VA
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	LINCOLNTON	NC
	NEWPORT	NC
	BENTON	TN
	WELCH	WV
4.87 /5.47	ROSWELL	GA
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	WINSTON-SALEM	NC
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	MOUNTAIN CITY	TN
	NASHVILLE	TN
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	FRNKLN/COWEE BLD	NC
	RALEIGH	NC
4.89 /5.49	MCMINVL/SHT MT	TN
	MEMPHIS	TN
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	BLUEFIELD	WV
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6.46 /6.06	SOUTH BOSTON	VA
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	WAVERLY	TN
6.715/6.115	RINGGOLD	GA
6.775/6.175	PULASKI	TN
6.835/6.235	HAMILTON	GA
6.865/6.265	HORNBEAK	TN
6.895/6.295	MAXWELL*	GA
6.925/6.325	COVINGTON	GA
6.01 /6.61	COLUMBUS	GA
	WARNER ROBBINS	GA
	GREENSBORO	NC
	NEW BERN	NC
	BEAUFORT	SC
	GRNVLE/CSRS HD	SC
	MYRTLE BEACH	SC
	CHATTANOOGA	TN
	NASHVILLE	TN
	BROMLEY MT	VA
	CHESAPEAKE	VA
	LYNCHBURG	VA
	SPENCER	WV
6.025/6.625	LAURINBURG	NC
	NEW MARKET	VA
6.035/6.635	BETSY LAYNE	EKY
6.04 /6.64	ATLANTA	GA
	CARROLLTON	GA
	WAYCROSS	GA
	HENDERSONVILLE	NC
	RALEIGH	NC
	WINSTON-SALEM	NC
	SUMTER	SC
	CROSSVILLE	TN
	MADISON	TN
	MEMPHIS	TN
	FINCASTLE	VA
	MARION	VA
	RICHMOND	VA
	ELKINS	WV
	HUNTINGTON	WV
6.055/6.655	CONCORD/KANNAP.	NC
	ALEXANDRIA	VA
	ALTAVISTA	VA
6.06 /6.66	MACON	GA
	CHARLESTON	SC
6.07 /6.67	HAZARD	EKY
	GAINESVILLE*	GA
6.07 /6.67	JESUP	GA
	BURLINGTON	NC
	FOREST CITY	NC
	COLUMBIA	SC
	BRISTOL	TN
	COOKEVILLE	TN
	LAFOLLETTE/WLT	TN
	NASHVILLE	TN
	BARREN SPRINGS	VA
	BRISTOL	VA
	LEXINGTON	VA
	WILLIAMSBURG	VA
	KAYENSWOOD	WV
6.085/6.685	BOAIRSVILLE	GA
	GRIFTON	NC
	STATESVILLE	NC
6.10 /6.70	ALBANY	GA
	JASPER	GA
	MILLEDGEVILLE	GA
	SAVANNAH	GA
	DUNN	NC
	GREENVILLE	SC
	LANCASTER	SC
	CHATTANOOGA	TN
	FRAYSER	TN
	MANCHESTER	TN
	MEMPHIS	TN
	UNION CITY	TN
	DANVILLE/WHT OAK	VA
	DUFFLD/POWLL MT	VA
	NORFOLK	VA
	RAVENSWOOD	WV
6.115/6.715	PRIND LAKE	NC
	BLACKSBURG	VA
	STERLING	VA
6.12 /6.72	COAL MTN	WV
6.13 /6.73	DOUGLAS	EKY
	ALBANY	GA
	ATHENS	GA
	BRUNSWICK	GA
	MARIETTA	GA
	RALFIGH	NC
	SALISBURY	NC
	WILMINGTON	NC
	N. AUGUSTA	SC
	SIMPSONVILLE	SC
	KNOXVILLE	TN
	LEBANON	TN
	MEMPHIS	TN
	HAMPTON	VA
	ALDERSON	WV
6.145/6.745	DILLON/PEE DEE	SC
	DYERSBURG	TN
	ROANOKE	VA
6.16 /6.76	STONE MTN	GA
	VALDOSTA	GA
	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
	CHARLESTON	SC
	FT JACKSON	SC
	BRISTOL/HLSTN MT	TN
	NASHVILLE	TN
	CHARLOTTESVILLE	VA
	FLORENCE	VA
	HUNTINGTON	WV
	MORGANTOWN	WV
	WHEELING	WV
6.175/6.775	CHARLOTTE	NC
	ELIZABETHTOWN	NC
	WYTHEVILLE	VA
6.19 /6.79	PIKEVILLE*	EKY
	FOLKSTON	GA
	MOULTRIE	GA
	NEWNAN	GA
	SWAINSBORO	GA
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	ANDSN/SASFRAS MT	SC
	SUMMERVILLE	SC
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	CHESAPEAKE	VA
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6.205/6.805	FAYETTEVILLE	NC
	GASTONIA	NC
6.22 /6.82	ALBANY	GA
	ATLANTA	GA
	LYONS	GA
	DURHAM	NC
	ROARING GAP	NC
	WILMINGTON	NC
	GRNVLE/PARIS MT	SC
	LAKE CITY	TN
	MEMPHIS	TN
	WINCHESTER	TN
	COVINGTON	VA
	WINCHESTER	VA
	CHARLESTON	WV
	CLARKSBURG	WV
6.235/6.835	ASHEVILLE	NC
	BOOIE ISLAND	NC
	WADESBORO	NC
	HAZEL MT	VA
7.255/6.835	LEXINGTON	SC
6.25 /6.85	PIKEVILLE	EKY
	DALLAS	GA
6.25 /6.85	WARNER ROBBINS	GA
	GOLDSBORO	NC
	HICKORY/BRT. MT	NC
	REIDSVILLE	NC
	FLORENCE	SC
	LAURENS	SC
	GTLBG/COVE MTN	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PORTSMOUTH	VA
	BKLY/FLAT TOP MT	WV
	BUCKHANNON	WV
6.265/6.865	GREENSBORO	NC
	FAYETTEVILLE	TN
7.465/6.865	WAXHAW	NC
6.28 /6.88	MAYTOWN	EKY
	COLUMBUS	GA
	MARIETTA	GA
	QUITMAN	GA
	SAVANNAH*	GA
	RALEIGH	NC
	SHELBY	NC
	COLUMBIA	SC
	BRISTOL	TN
	MEMPHIS	TN
	NASHVILLE	TN
	OAK RIDGE	TN
	BRISTOL	VA
	RICHMOND	VA
	SALEM	VA
	CHARLESTON	WV
6.295/6.895	MADISON	NC
	WAXHAW	NC
6.31 /6.91	MOREHEAD	EKY
	GAINESVILLE	GA
	GRIFFIN	GA
	AHOSKIE	NC
	ASHVL/SPIVEY MT	NC
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	WHITE HALL	SC
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	ROME	GA
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	DURHAM	NC
	MANTEO	NC
	CHARLESTON	SC
	COLUMBIA	SC
	GREER	SC
	N. AUGUSTA	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	HAMPTON	VA
	RICHMOND	VA
	ROANOKE	VA
	NEW MARTINSVLLE	WV
	RICHWOOD	WV
	WEIRTON	WV
6.355/6.955	OLD FORT	NC
	ROCKINGHAM	NC
6.37 /6.97	ATLANTA	GA
	SAVANNAH*	GA
	MT AIRY	NC
	SMITHFIELD	NC
	ANDERSON/LOCAL	SC
	FLORENCE	SC
	ALTAMONT	TN
	KNGSPT/BAYS MT	TN
	MEDINA	TN
	OAK RIDGE	TN
	MANASSAS	VA
	VIRGINIA BEACH	VA
	LOGAN	WV
	PARKERSBURG	WV
6.385/6.985	PRESTON	GA
	ALBEMARLE	NC
	DILLSBORO	NC
	ROANOKE/POOR MT	VA
6.40 /7.00	ATLANTA	GA
	LAGRANGE	GA
	HIGH POINT	NC
	JACKSONVILLE	NC
	MARION	SC
	PICKENS	SC
	MEMPHIS	TN
	SUFFOLK	VA
	ST ALBANS	WV
7.60 /7.00	ELKHORN CITY	EKY
	HIGH POINT	NC
	BLOUNTVILLE	TN
	CHATTANOOGA	TN
	CLARKSVILLE	TN
7.60 /7.00	HAYSI	VA
	TERRA ALTA	WV
6.415/7.015	BLUEFIELD	VA
7.615/7.015	CHARLOTTE	NC
	SUMTER	SC
	NASHVILLE	TN
	FREDRICKSBURG	VA
6.43 /7.03	ERWIN	NC
	ROCK HILL	SC
	FRAYSER	TN
	LEXINGTON	TN
	DEWEY	VA
7.63 /7.03	PANTSVILLE	EKY
	GREENSBORO	NC
	ROANOKE RAPIDS	NC
	MYRTLE BEACH, N	SC
	FAYETTEVILLE	TN
	HENDERSONVILLE	TN
	MEMPHIS	TN
	MORRISTOWN	TN
	WAYNESBORO	VA
	MULLENS	WV
6.445/7.045	HOPE MILLS	NC
	ROBBINSVILLE	NC
	ARLINGTON	VA
7.645/7.045	METTER	GA
	STATSVL/ASBRY MT	NC
	RADFORD	VA
	STAUNTON	VA
	VIRGINIA BEACH	VA
6.06 /7.06	MADISON	WV
6.46 /7.06	COHUTTA-RTTY	GA
	CHARLOTTE	NC
	ELIZABETH CITY	NC
	MEMPHIS	TN
	SOUTH BOSTON	VA
	PRINCETON	WV
7.66 /7.06	MACON	GA
	THOMASVILLE	GA
	MACO	NC
	SUMTER	SC
	GREENEVILLE	TN
	SHELBYVILLE	TN
	RICHMOND	VA
	POINT PLEASANT	WV
6.475/7.075	BURLINGTON	NC
7.675/7.075	BURLINGTON	NC
	GREENVILLE	SC
	KNOXVILLE	TN
	WAYNSBR/AFTON MT	VA
7.69 /7.09	GREENVL/ESTN NC	NC
	ORANGEBURG	SC
	SPARTANBURG	SC
	MEMPHIS	TN
7.69 /7.09	SPARTA	NC
	GALAX/BRIRP MT	VA
7.70 /7.10	BLAIKSVILLE	GA
7.705/7.105	MARION/OLD FORT	NC
	MONROE	NC
	NASHVILLE	TN
	BEDFORD	VA
	BRIDGEPORT	WV
6.09 /7.11	LOGAN	WV
7.72 /7.12	AUGUSTA*	GA
	CEDARTOWN	GA
	GASTYSPCR MT	NC
	ROCKY MOUNT	NC
	MYRTLE BEACH	SC
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7.795/7.195	LYNCHBURG	VA
7.81 /7.21	CONYERS	GA
	STATESBORO	GA

	WEST BROW	GA
	GREENSBORO	NC
	WHITEVILLE	NC
	LITTLE MT.	SC
	COOKEVILLE	TN
	JACKSON	TN
	MCLEAN	VA
	WISE/HIGH KNOB	VA
7.825/7.225	HILLSBOROUGH	NC
	MORRISTOWN	TN
7.84 /7.24	ASHLAND	EKY
	IRWINTON	GA
	CARTHAGE	NC
	EDEN	NC
	FOREST CITY	NC
	FRANKLIN	NC
	LANCASTER	SC
	PROSPERITY	SC
	GALLATIN	TN
	MEMPHIS	TN
	PETERSBURG	VA
	WOODBRIDGE	VA
7.855/7.255	ATLANTA	GA
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	MARION	NC
	DONELSON	TN
	PAMSLEY	VA
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7.87 /7.27	AMERICUS	GA
	BUFORD	GA
	BENSON	NC
	WAYNESVILLE	NC
	CHARLESTON	SC
	LONG MT	SC
	GALLATIN	TN
	JOHNSON CITY	TN
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	MEMPHIS	TN
	NASHVILLE	TN
	BERRYVILLE	VA
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	TOCCOA*	GA
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	LENOIR	NC
	COLUMBIA	SC
	COVINGTON	TN
	CROSSVILLE	TN
	NASHVILLE	TN
	LEXNGTN/COLE MT	VA
	WARSAW	VA
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	MADISON	TN
	GATE CITY	VA
	FRANKLIN	WV
7.95 /7.35	DANVILLE	VA
7.96 /7.36	DOUGLASVILLE	GA
	DUBLIN	GA
	BOONE	NC
	GREENVILLE	NC
	LUMBERTON	NC
	COLUMBIA	SC
	KNOXVILLE	TN
	MEMPHIS	TN
	NASHVILLE	TN
	PARIS	TN
	CHESTERFIELD	VA
7.975/7.375	BURNSVILLE	NC
	HILLSVILLE	NC
	GEORGETOWN	SC
	NASHVILLE	TN
	HILLSVILLE	VA
	LYNCHBURG	VA
	NEWPORT NEWS	VA
	GRAFTON	WV
	ST ALBANS	WV
7.99 /7.39	JENKINS	EKY
	THOMASTON	GA
	EDEN/STONEVILLE	NC
	SMITHFIELD	NC
	DAYTON/RHEA CTY	TN
	GALLATIN	TN
	MEMPHIS	TN
	PETERSBURG	VA
	PARKERSBURG	WV
6.43 /7.43	GRIFFIN	GA
5.00 /7.50	CHARLOTTE	NC
6.19 /7.51	MEMPHIS	TN
7.015/7.615	CLEVELAND	GA
7.075/7.675	BUFORD	GA
7.135/7.735	VALDOSTA	GA
	ALAMO	TN
7.225/7.825	CLOUDLAND	GA
7.285/7.885	ASHBURN	GA
	BIRMINGHAM(ALA)	TN
7.30 /7.90	ROME	GA
	MONROE	NC
7.315/7.915	DALTON*	GA
	FORSYTH	GA
6.085/7.955	MORGANTOWN	WV
7.375/7.975	ATHENS*	GA
	GREENVILLE	SC
5.23 /ET	HAMPTON	VA

220 MHZ

2.22 /3.82	FALLS CHURCH	VA
2.30 /3.90	COLUMBIA	SC
	NASHVILLE	TN
2.32 /3.92	HIGH POINT	NC
2.34 /3.94	CANTON	GA
	ASHVL/MT PISGAH	NC
	HILLSBOROUGH	NC
	CLARKSVILLE	TN
	MEMPHIS	TN
	FAIRFAX	VA
	SUFFOLK	VA
2.36 /3.96	ROCKY MOUNT	NC
2.38 /3.98	LINWOOD	NC
	GALLATIN	TN
2.40 /4.00	LOCUST	NC
2.42 /4.02	FAYETTEVILLE	NC
	HICKORY	NC
	NASHVILLE	TN
2.44 /4.04	WINSTON-SALEM	NC
2.46 /4.06	EASLEY/SASFRS MT	SC
	ROBERTSON CO.	TN
2.52 /4.12	KENNESAW	GA
2.54 /4.14	PICKENS/CSRS HD	SC
	HUNTINGTON	WV
2.56 /4.16	KENDIR	NC
2.64 /4.24	CANTON/CHBRS MT	NC
2.70 /4.30	STATESVILLE	NC
2.74 /4.34	FRIES	VA
2.80 /4.40	CHARLOTTE	NC
2.86 /4.46	KNOXVILLE	TN
2.94 /4.54	MT MITCHELL	NC
3.00 /4.60	ASHEVILLE	NC
3.04 /4.64	RALEIGH	NC
	WINSTON-SALEM	NC
3.06 /4.66	CANTON	GA
3.08 /4.68	CHARLOTTE	NC
3.10 /4.70	WSTFLD/SAUTN MT	VA
3.14 /4.74	KINGSTON/LICK KB	WV
3.16 /4.76	SALISBURY	NC
	DAN/WHT OAK	VA
3.18 /4.78	CHATTANOOGA	TN
3.20 /4.80	MORGANTON	NC
3.22 /4.82	ATLANTA	GA
	GREENSBORO	NC
	ALEXANDRIA	VA
3.28 /4.88	WSTFLD/SAUTN MT	NC
3.30 /4.90	CHATTANOOGA	TN
3.34 /4.94	KENNESAW	GA
	GREENEVILLE	TN
	ROANOKE/POOR MTN	VA
3.36 /4.96	CHERRYVILLE	NC

440 MHZ

9.25 /6.27	ALEXANDRIA	VA
9.25 /7.25	ALBANY	GA
	CHATTANOOGA	TN
7.05 /2.05	MEDINA	TN
7.25 /2.25	COVINGTON	VA
	SOUTH BOSTON	VA
7.75 /2.75	ROANOKE	VA
7.80 /2.80	FRANKLIN	TN
	MEMPHIS	TN
7.90 /2.90	HIGH POINT	NC
8.00 /3.00	WIN-SAL/SAUTN MT	NC
	MEMPHIS	TN
8.30 /3.30	FAYETTEVILLE	NC
8.40 /3.40	MEMPHIS	TN
8.50 /3.50	TYSONS CORNER	VA
8.65 /3.65	MT MITCHELL	NC
	HAMPTON	VA
8.70 /3.70	LOCUST	NC
8.75 /3.75	ALAMO	TN
	FINCASTLE	VA
9.00 /4.00	ARLINGTON	VA
9.05 /4.05	WAYNSBR/AFTON MT	VA
9.10 /4.10	HILLSBOROUGH	NC
	COLUMBIA	SC
	CHATTANOOGA	TN
9.15 /4.15	LEXNGTN/COLE MT	VA
9.20 /4.20	COLUMBUS	GA
9.25 /4.25	CHARLOTTESVILLE	VA
9.30 /4.30	FISHERVILLE	TN
	KNOXVILLE	TN
	WAYNESBORO	VA
9.35 /4.35	LYNCHBURG	VA
9.40 /4.40	FAYETTEVILLE	NC
	OAK RIDGE	TN
9.35 /4.45	GALLATIN	TN
9.45 /4.45	LYNWOOD	NC
	GALLATIN	TN
	FALLS CHURCH	VA
9.50 /4.50	KENNESAW	GA
	KNOXVILLE	TN
	MEMPHIS	TN
	LYNCHBURG	VA
	PETERSBURG	VA
9.10 /4.509	CHARLESTON	SC
9.60 /4.60	CHARLOTTE	NC
	KNOXVILLE	TN
	ALEXANDRIA	VA
9.65 /4.65	GREENEVILLE	TN
9.675/4.675	NASHVILLE	TN
	NASHVILLE	TN
9.70 /4.70	KNOXVILLE	TN
	MORGANTOWN	WV
9.775/4.775	NASHVILLE	TN
9.80 /4.80	CANTON/CHBRS MT	NC
	GREENEVILLE	TN
	MEMPHIS	TN
	KINGSTON/LICK KB	WV
	MORGANTOWN	WV
9.85 /4.85	CHARLOTTE	NC
	PETERSBURG	VA
9.875/4.875	NASHVILLE	TN
9.90 /4.90	ASHVL/MT PISGAH	NC
	GREENSBORO	NC
9.95 /4.95	BENTON/SAN MT	TN
	STAUNTON	VA
	WIKGINIA BEACH	VA
9.975/4.975	NASHVILLE	TN
2.25 /7.25	ROCK HILL	SC
2.50 /7.50	ROANOKE/POOR MT	VA
4.225/9.225	MANASSAS	VA
4.25 /9.25	STONE MTN	GA
4.40 /9.40	MEMPHIS	TN
4.50 /9.50	WARNER ROBBINS	GA
4.60 /9.60	BUCKHEAD	GA
	CHARLOTTE	NC
4.75 /9.75	FAIRFAX	VA
4.85 /9.85	ANNANDALE	VA
4.90 /9.90	WOODBRIDGE	VA

6-METERS

3.05 /2.05	MARIETTA	GA
2.58 /2.48	FAIRFAX	VA
2.525/2.525	HENDERSONVILLE	NC
2.76 /2.525	KNOXVILLE	TN
3.525/2.525	NORFOLK	VA
2.01 /3.01	HENDERSONVILLE	NC
	NEWPORT	NC
	CHATTANOOGA	TN
	MEMPHIS	TN
	ABINGTON	VA
	LEXNGTN/COLE MT	VA
	NORTN/HIGH KB	VA
2.03 /3.03	CHARLOTTE	NC
	ROANOKE RAPIDS	NC
2.07 /3.07	SOUTH BOSTON	VA
2.13 /3.13	ALEXANDRIA	VA
	DANVILLE(OCC)	VA
2.15 /3.15	HIGH POINT	NC
	KNOXVILLE	TN
	LYNCHBURG	VA
2.25 /3.25	KNOXVILLE	TN
2.35 /3.35	CARY	NC
2.47 /3.47	HICKORY	NC
2.67 /3.67	STATESVILLE	NC

NORTH CAROLINA REPEATERS

2-METERS

AHOSKIE	WB4YNF	144.53	145.13	A
AHOSKIE	WA4ZGQ	146.31	146.91	N PA
ALBEMARLE	K4OGB	146.385	146.985	
ANDSN MT/NEWTON	WD4LCF	144.85	145.45	N
ASHEBORO	WD4AIB	147.855	147.255	PAL
ASHEVILLE	WA4QCO	146.235	146.835	A
ASHVL/MT PISGAH	WA4BVW	146.16	146.76	
ASHVL/SPIVEY MT	W4MOE	146.31	146.91	
BENSON	WR4ARL	147.87	147.27	N PA
BODIE ISLAND	KE4PB	146.235	146.835	N C
BOONE	WA4KDB	147.96	147.36	
BREVARD	N4DJB	147.735	147.135	N
BURGAW	K4LZY	146.34	146.94	
BURLINGTON	WR4AKY	146.07	146.67	N
BURLINGTON	W4VGZ	146.475	147.075	N EA
BURLINGTON	WA4HBQ	147.675	147.075	N EA
BURNSVILLE	WA4LLR	147.975	147.375	A
CANTON/CHBRS MT	WB4OKG	144.75	145.35	
CARTHAGE	W4NIW	147.84	147.24	EA
CHARLOTTE	KE4ZC	144.57	145.17	
CHARLOTTE	W4BFB	144.63	145.23	
CHARLOTTE	WD4JWO	144.69	145.29	N
CHARLOTTE	WB4HTR	144.75	145.35	N
CHARLOTTE	KA4HNP	145.00	147.50	N
CHARLOTTE	W4BFB	146.175	146.775	R
CHARLOTTE	WR4AEU	146.34	146.94	A
CHARLOTTE	WR4ALO	146.46	147.06	N A
CHARLOTTE	WB4KPF	147.615	147.015	PA
CHRYVL/BKRS MT	WB4UDS	144.55	145.15	
CONCURD/KANNAP.	K4CEB	146.055	146.655	A
DILLSBURO	WB4NSS	146.385	146.985	
DUNN	WB4FXM	146.10	146.70	PA
DURHAM	WA4WTX	146.22	146.82	N
DURHAM	WA4BFT	146.34	146.94	N A
EDEN	WA4ACP	147.84	147.24	N
EDEN/STONEVILLE	WA4QBG	147.99	147.39	
ELIZABETH CITY	WA4VTX	146.46	147.06	N A
ELIZABETHTOWN	N4DHW	146.175	146.775	N
ERWIN	WR4ALY	146.43	147.03	N
FAYETTEVILLE	N4NG	144.83	145.43	N C
FAYETTEVILLE	N4EWG	146.205	146.805	
FAYETTEVILLE	WB4YZF	146.31	146.91	
FAYVLLE/FT BRAGG	W4LPL	147.93	147.33	
FOREST CITY	W4TMT	146.07	146.67	N A
FOREST CITY	WA4BKU	147.84	147.24	N
FRANKLIN	WB4YAO	147.84	147.24	N
FRNKLN/COWEE BLD	N4AC	144.89	145.49	
GAST/SPCR MT	W4REW	147.72	147.12	A
GASTONIA	K4ZED	146.205	146.805	N L
GOLDSBURO	K4CYP	146.25	146.85	A
GREENSBORO	N4AZM	144.65	145.25	A
GREENSBORO	K4SNI	146.01	146.61	A
GREENSBORO	WA4MSS	146.16	146.76	
GREENSBORO	WR4AUA	146.265	146.865	N
GREENSBORO	WD4IPZ	147.63	147.03	PA
GREENSBORO	WR4ANL	147.81	147.21	N
GREENVILLE	WA4DAN	144.75	145.35	
GREENVILLE	W4AMC	147.96	147.36	
GREENVL/ESTN NC	W4GDF	147.69	147.09	
GRIFTON	W4NBR	146.085	146.685	
HENDERSONVILLE	WB4YAO	146.04	146.64	N L
HENDSVL/PINCK MT	WA4KNI	144.67	145.27	
HICKORY/BRT. MT	WR4ACM	146.25	146.85	N
HIGH POINT	N4XO	144.51	145.11	N C
HIGH POINT	K4AZA	146.40	147.00	LPA
HIGH POINT	K4AZA	147.60	147.00	LPA
HIGH POINT	KA4DHP	147.765	147.165	PA
HILLSBOROUGH	WA4WTX	147.825	147.225	A
HILLSVILLE	WD4BTS	147.975	147.375	N A
HOPE MILLS	WB4TRW	146.445	147.045	N
JACKSONVILLE	WD4FVO	146.40	147.00	PA
JACKSONVILLE	WR4ATW	147.90	147.30	N
LAKE TOXAWAY	WR4AGH	147.795	147.195	N
LAURINBURG	K4QWK	146.025	146.625	A
LENOIR	KN4K	147.93	147.33	
LEVEL CROSS/GBO	K4VUW	146.19	146.79	
LEWISVILLE	N4GGK	144.61	145.21	
LEXINGTON	K4IZM	146.31	146.91	PA
LILLINGTON	WA4FKI	144.87	145.47	N
LINCOLNTON	WD4PLY	144.85	145.45	N
LUMBERTON	WB4MDI	147.96	147.36	
MACO	WA4LED	147.66	147.06	N
MADISON	KA4YFF	146.295	146.895	R
MANTEO	W4PCN	146.34	146.94	PA

CVRA REPEATER SYMBOLS

Unmarked in First Code column-Full CVRA Members

N	NON Member CVRA	RB	Remote Base System
D	Delinquent Member	T	Tone Access Repeater
M	T-MARC Repeater	L	Linked Repeater
A	Open Autopatch	R	Radioteletype Rptr.
PA	Private Autopatch	V	Television (SS or ATV)
EA	Emerg. Autopatch	P	Proposed Repeater
		C	Under Construction
		O	Off Air Temporarily

MAKION	WB4UCF	147.855	147.255	N	P
MAKION/OLD FORT	KA4DEC	147.705	147.105		
MAYODAN	N4GWZ	144.55	145.15	N	C
MONROE	K4BGU	147.30	147.90	N	
MONROE	K4JCK	147.705	147.105	N	A
MORGANTON	K4RP	147.75	147.15		
MT AIRY	WA4ZAS	146.37	146.97		EA
MT AIRY	WA4CQK	147.78	147.18	N	
MT AIRY/FANCY GP	WD4MDP	144.73	145.33		
MT MITCHELL	WA4BVW	144.59	145.19		
N. WILKESBORO	K4ITL	144.77	145.37		L
NEW BERN	WD4JMS	146.01	146.61		A
NEWPORT	K4GRW	144.85	145.45	N	A
NEWTON	N4AWV	144.83	145.43	N	P
OLD FORT	KA4ROZ	146.355	146.955	N	C
OXFORD	WA4JCS	144.57	145.17		A
RALEIGH	N4BEA	144.67	145.27		PA
RALEIGH	N4BEA	144.89	145.49		PA
RALEIGH	W4DW	146.04	146.64		A
RALEIGH	K4BWC	146.13	146.73		A
RALEIGH	K4ITL	146.28	146.88		
RALEIGH	K4ITL	147.75	147.15		PA
REIDSVILLE	K4YET	146.25	146.85	N	
ROANOKE RAPIDS	K4PUV	147.63	147.03		
ROARING GAP	WB4PZA	146.22	146.82		
ROBBINSVILLE	WB4ZQB	146.445	147.045	N	L
ROCKINGHAM	WA4ULA	146.355	146.955	N	
ROCKY MOUNT	WB4WAA	147.72	147.12		A
SALISBURY	W4EXU	146.13	146.73		
SANFORD	WB4EJJ	147.78	147.18		A
SHELBY	WD4DJA	146.28	146.88		
SHELBY	WD4DJA	147.945	147.345		A
SMITHFIELD	KD4JQ	146.37	146.97		A
SMITHFIELD	W4MKL	147.99	147.39		PA
SPRING LAKE	WB4KDC	146.115	146.715	N	
STATESVILLE	AI4O	146.085	146.685		PA
STATSVL/ASBRY MT	WA4JRL	147.645	147.045		
TUCKASEGEE	W8OMV	147.90	147.30	N	
UNION CROSS	WA4RBW	147.915	147.315		
WADESBORO	W4USH	146.235	146.835	N	
WAXHAW	WB4QOA	146.295	146.895		PA
WAXHAW	WA4ZRS	147.465	146.865		A
WAYNESVILLE	N4SM	147.87	147.27		PA
WHITEVILLE	K4MSD	147.81	147.21	N	C
WILLIAMSTON	KA4KNU	144.81	145.41		
WILMINGTON	N4WI	146.13	146.73		PA
WILMINGTON	WB4UNG	146.22	146.82		
WILMINGTON	WD4HMA	147.78	147.18	N	C
WIN-SAL/SAUTN MT	WB4KQN	144.79	145.39		L
WINSTON-SALEM	W4HKB	144.87	145.47	N	P
WINSTON-SALEM	WA4GIC	146.04	146.64		A

220 MHZ

ASHEVILLE	NC4N	223.00	224.60		
ASHVL/MT PISGAH	WA4BVW	222.34	223.94		
CANTON/CHBRS MT	WB4OKG	222.64	224.24		C
CHARLOTTE	KE4ZC	222.80	224.40		
CHARLOTTE	WB4KPF	223.08	224.68		LA
CHERRYVILLE	WB4UDS	223.36	224.96		
FAYETTEVILLE	W4EHF	222.42	224.02		
GREENSBORO	KZ4O	223.22	224.82	N	RL
HICKORY	WR4ACM	222.42	224.02	N	
HIGH POINT	K4AZA	222.32	223.92		LPA
HILLSBOROUGH	WA4WTX	222.34	223.94		L
LENOIR	K4HTV	222.56	224.16	N	C
LINWOOD	KA4HUV	222.38	223.98	N	
LOCUST	WA4ZIA	222.40	224.00		
MORGANTON	WB4PML	223.20	224.80		
MT MITCHELL	WA4BVW	222.94	224.54		
RALEIGH	WA4PEN	223.04	224.64	N	
ROCKY MOUNT	KA4DAP	222.36	223.96	N	
SALISBURY	W4EXU	223.16	224.76		
STATESVILLE	WA4PVI	222.70	224.30	N	
WINSTON-SALEM	WB4UGW	222.44	224.04	N	C
WINSTON-SALEM	WA4YHH	223.04	224.64	N	
WSTFLD/SAUTN MT	W4RXG	223.10	224.70		R
WSTFLD/SAUTN MT	W4RXG	223.28	224.88		

440 MHZ

ASHVL/MT PISGAH	WA4COS	449.90	444.90	N	
CANTON/CHBRS MT	WB4OKG	449.80	444.80		C
CHARLOTTE	W4BFB	444.60	449.60		P
CHARLOTTE	WR4AEU	449.60	444.60		P
CHARLOTTE	WR4ALO	449.85	444.85	N	
FAYETTEVILLE	N4NG	448.30	443.30	N	C
FAYETTEVILLE	KB4ZW	449.40	444.40	N	C
GREENSBORO	WB4HZI	449.90	444.90	N	
GREENVILLE	AI4J	449.80	444.80	N	C
HIGH POINT	K4AZA	447.90	442.90		L
HILLSBOROUGH	WA4WTX	449.10	444.10		
LOCUST	WA4LBT	448.70	443.70		
LYNWOOD	KA4HEV	449.45	444.45	N	P
MT MITCHELL	WA4BVW	448.65	443.65		C
WIN-SAL/SAUTN MT	WB4KQN	448.00	443.00		LC

6-METERS

CARY	WR4AVP	52.35	53.35	N	
CHARLOTTE	KE4ZC	52.03	53.03		
HENDERSONVILLE	WB4YAO	52.01	53.01	N	
HENDERSONVILLE	WB4YAO	52.525	52.525	N	RB
HICKORY	WR4ACM	52.47	53.47	N	
HIGH POINT	K4AZA	52.15	53.15		L
NEWPORT	K4GRW	52.01	53.01	N	P
ROANOKE RAPIDS	K4PUV	52.03	53.03		C
STATESVILLE	WA4WRS	52.67	53.67	N	

10-METERS

NEWPORT	K4GRW	29.56	29.66	N	P

TENNESSEE REPEATERS

2-METERS

ALAMO	WB4EDS	147.135	147.735		
ALTAMONT	WR4AWN	146.37	146.97	N	
ATHENS	WB4GRC	144.71	145.31	N	
BENTON	K4SIR	144.85	145.45	N	
BIRMINGHAM(ALA)	WD4BXA	147.285	147.885		A
BLOUNTVILLE	WB4RAV	144.71	145.31		
BLOUNTVILLE	WA4KMG	147.60	147.00		PA
BRISTOL	N4GFD	144.69	145.29	N	C
BRISTOL	K4ILW	146.07	146.67		A
BRISTOL	WD4CYZ	146.28	146.88		
BROWNSVILLE	WA4ABU	146.655	146.055		PA
CENTERVILLE	WB4PZB	147.915	147.315	N	
CHATTANOOGA	KB4TJ	144.79	145.39		A
CHATTANOOGA	K4CMY	146.01	146.61		
CHATTANOOGA	AD4F	146.10	146.70	N	
CHATTANOOGA	W4DSK	146.19	146.79		A
CHATTANOOGA	WA4ZOK	147.60	147.00		PA
CHATTANOOGA-RTTY	K4CMY	144.53	145.13	N	
CLARKSVILLE	WA4TEQ	147.60	147.00	N	
CLEVELAND	WR4AQV	147.78	147.18	N	
COLUMBIA	WR4AIX	147.72	147.12	N	
COOKEVILLE	WA4UCE	146.07	146.67	N	A
COOKEVILLE	N4WS	147.81	147.21		
COVINGTON	WA4VXW	147.93	147.33	N	
CRUSSVILLE	KE4RX	146.04	146.64	N	
CRUSSVILLE	W4CV	147.93	147.33	N	
DAYTON/RHEA CTY	K4ZLA	147.99	147.39	N	
DECATUR-PONE KB	W4RJC	144.55	145.15		
DONELSON	WBONOO	147.855	147.255	N	
DYERSBURG	AA4HF	146.145	146.745	N	
FAYETTEVILLE	KO4G	146.265	146.865	N	
FAYETTEVILLE	W4NIQ	147.03	147.03	N	
FISHERVILLE	N4DRL	144.65	145.25	N	A
FRANKLIN	WB4HCK	144.55	145.15	N	RB
FRAYSER	W4UFT	146.10	146.70	N	
FRAYSER	W4ZJM	146.43	147.03	N	
GALLATIN	KA4LUG	147.84	147.24		PA
GALLATIN	WA4YOC	147.87	147.27		
GALLATIN	WB4DLQ	147.99	147.39	N	
GREENEVILLE	N4TV	144.65	145.25		
GREENEVILLE	WB4TUO	144.81	145.41		
GREENEVILLE	WA4LYF	147.66	147.06		A
GTLBG/COVE MTN	WA4KJH	146.25	146.85		
HENDERSONVILLE	N4WF	147.63	147.03	N	
HERMITAGE	WB4RAB	144.61	145.21		C
HOHENWALD	WB4LHV	147.765	147.165	N	
HORNBEAK	WA4OXK	146.865	146.265	N	
JACKSON	W4WKZ	147.81	147.21	N	
JASPER	KA4LGN	144.59	145.19	N	
JOHNSON CITY	WB4SQC	144.53	145.13		PA
JOHNSON CITY	WB4IKB	146.19	146.79		L
JOHNSON CITY	KE4FH	147.87	147.27		A
KNGSPT/BAYS MT	W4TRC	146.37	146.97		
KNOXVILLE	WB4JSD	144.51	145.11	N	R
KNOXVILLE	K4KFD	144.61	145.21	N	A
KNOXVILLE	WA4YIH	144.73	145.33		A
KNOXVILLE	WA4GZE	144.77	145.37		
KNOXVILLE	WB4GBI	144.83	145.43		
KNOXVILLE	WB4GBI	144.83	145.43		
KNOXVILLE	WB4GBI	144.87	145.47		
KNOXVILLE	WB4IOB	146.13	146.73		
KNOXVILLE	K4HXD	146.34	146.94		
KNOXVILLE	K4HXD	147.675	147.075		A
KNOXVILLE	W4BBB	147.90	147.30		EA
KNOXVILLE	WB4HAP	147.96	147.36		
LAFOLLETTE/WLT	W4TZG	146.07	146.67		
LAKE CITY	WB4OAH	146.22	146.82	N	
LEBANON	WR4BBM	146.13	146.73	N	
LEXINGTON	WB4LGH	146.43	147.03	N	
LOUDON	KE4SK	144.57	145.17		
MADISON	WB4NTM	146.04	146.64	N	
MADISON	W4KFK	147.945	147.345	N	
MANCHESTER	W4FOT	146.10	146.70	N	A
MARTIN	WA4ZQX	146.625	146.025		
MCMINVL/SHT MT	W4KKO	144.89	145.49		
MEDINA	K4BEZ	146.37	146.97		A
MEMPHIS	WA4VIP	144.81	145.41	N	
MEMPHIS	WA4KOG	144.89	145.49	N	
MEMPHIS	WB4MQD	145.33	PKET	N	
MEMPHIS	W4GYS	146.04	146.64	N	
MEMPHIS	WR4AOG	146.10	146.70	N	R
MEMPHIS	KA4JXT	146.13	146.73	N	
MEMPHIS	WR4ABS	146.19	147.51	N	
MEMPHIS	W4BS	146.22	146.82	N	
MEMPHIS	WA4KOG	146.25	146.85	N	A
MEMPHIS	WA4ETE	146.28	146.88	N	A
MEMPHIS	K4BN	146.34	146.94	N	A

MEMPHIS	K4FZJ	146.40	147.00	N	
MEMPHIS	WA4MQQ	146.46	147.06	N	
MEMPHIS	W4ZJM	147.63	147.03	N	L
MEMPHIS	WR4AWT	147.69	147.09	N	
MEMPHIS	WB4DAZ	147.72	147.12	N	AT
MEMPHIS	WA5KUB	147.75	147.15	N	
MEMPHIS	WA4KOG	147.78	147.18	N	
MEMPHIS	WD4APK	147.84	147.24	N	
MEMPHIS	WR4AZC	147.87	147.27	N	
MEMPHIS	WA4ADT	147.90	147.30	N	
MEMPHIS	W4MMI	147.96	147.36	N	
MEMPHIS	WR4ASR	147.99	147.39	N	
MIDDLEBRO(KY/TN)	W4PPM	144.63	145.23	N	
MORRISTOWN	WD4RTT	147.63	147.03		
MORRISTOWN	WB4OAH	147.825	147.225	N	
MOUNTAIN CITY	WD4OMO	144.87	145.47	N	
MT. JULIET	WB4DOR	144.79	145.39	N	C
MURFREESBORO	WB4LHO	144.57	145.17	N	
NASHVILLE	N4AJS	144.65	145.25		PA
NASHVILLE	WB4FQW	144.73	145.33	N	
NASHVILLE	KA4KNG	144.75	145.35	N	
NASHVILLE	WB4ZSA	144.83	145.43		
NASHVILLE	N4ARK	144.87	145.47	N	
NASHVILLE	WA4PCD	146.01	146.61	N	
NASHVILLE	WB4NTM	146.07	146.67	N	
NASHVILLE	WB4QES	146.16	146.76	N	
NASHVILLE	WR4AFA	146.19	146.79		
NASHVILLE	WA4PCD	146.25	146.85	N	
NASHVILLE	WB4QES	146.28	146.88	N	
NASHVILLE	WA4PCD	146.34	146.94	N	
NASHVILLE	AF4K	147.615	147.015	N	
NASHVILLE	N4WF	147.705	147.105	N	
NASHVILLE	WB4JVP	147.75	147.15	N	
NASHVILLE	WA4PCD	147.78	147.18	N	
NASHVILLE	WB4ZSA	147.90	147.30		PA
NASHVILLE	N4AJS	147.93	147.33		PA
NASHVILLE	WB4NTM	147.96	147.36	N	
NASHVILLE	WB4JTN	147.975	147.375	N	
OAK RIDGE	W4SKH	146.28	146.88		
OAK RIDGE	W4SKH	146.37	146.97		A
OAK RIDGE	K4EAJ	147.72	147.12		L
OAK RIDGE	K4EAJ	147.75	147.15		R
PARIS	K4KLX	147.96	147.36	N	
PIKEVILLE(KY)	KA4BOH	144.59	145.19	N	
PIKEVILLE(KY)	N4ETG	146.19	146.79	N	
PULASKI	KA4CCL	146.775	146.175	N	
SAVANNAH	WB4DQU	146.31	146.91	N	
SHELBYVILLE	WR4AQM	147.66	147.06	N	
SHORT MTN	W4YXA	146.31	146.91		
SPARTA	W4BSA	147.69	147.09		A
STANTONVILLE	KA4OHC	144.79	145.39		
UNION CITY	WA4YGM	146.10	146.70	N	
WAVERLY	NO4Q	146.685	146.085		
WINCHESTER	WR4AFH	146.22	146.82	N	

220 MHZ

CHATTANOOGA	K4VCM	223.18	224.78		A
CHATTANOOGA	WA4ZOK	223.30	224.90		
CLARKSVILLE	KF4GP	222.34	223.94	N	
GALLATIN	WB4ZSA	222.38	223.98		PA
GREENEVILLE	WB4NKM	223.34	224.94		A
KNOXVILLE	WA4YON	222.86	224.46		EA
MEMPHIS	W4ZJM	222.34	223.94	N	L
NASHVILLE	WB4KAB	222.30	223.90	N	
NASHVILLE	N4DKA	222.42	224.02	N	
ROBERTSON CO.	WA4KHJ	222.46	224.06	N	C

440 MHZ

ALAMO	WB4EDS	448.75	443.75		L
BENTON/BEAN MT	K4SIR	449.95	444.95	N	C
CHATTANOOGA	WA4ZOK	439.25	427.25		V
CHATTANOOGA	WA4NFO	449.10	444.10		
FISHERVILLE	N4DDS	449.30	444.30	N	A
FRANKLIN	WB4EPG	447.80	442.80	N	
GALLATIN	WA4YQC	449.35	444.45		
GALLATIN	WD4KWP	449.45	444.45		PA
GREENEVILLE	WB4NKM	449.65	444.65		
KNOXVILLE	K4HXD	449.30	444.30		
KNOXVILLE	WB4HAP	449.50	444.50		
KNOXVILLE	K84NK	449.60	444.60		EA
KNOXVILLE	WB4GBI	449.70	444.70		C
MEDINA	K4BEZ	447.05	442.05		AL
MEMPHIS	WA4KOG	444.40	449.40	N	
MEMPHIS	WA4QWW	447.80	442.80	N	
MEMPHIS	W4ZJM	448.00	443.00	N	
MEMPHIS	WA4DOA	446.40	443.40	N	A
MEMPHIS	KA4JKT	449.50	444.50	N	A
MEMPHIS	WD4APK	449.80	444.80	N	
NASHVILLE	WA4PCD	449.675	444.675	N	
NASHVILLE	WA4PCD	449.675	444.675	N	C
NASHVILLE	N4TK	449.775	444.775	N	
NASHVILLE	WB4THG	449.875	444.875	N	
NASHVILLE	WB4QES	449.975	444.975	N	
OAK RIDGE	K4EAJ	449.40	444.40		L

10-METERS

KNOXVILLE	K4HXD	29.52	29.62		C
MEMPHIS	W4ZJM	29.52	29.62	N	

6-METERS

CHATTANOOGA	WB4LRD	52.01	53.01	N	
KNOXVILLE	WB4IOB	52.15	53.15		A
KNOXVILLE	WA4YON	52.25	53.25		
KNOXVILLE	K4HXD	52.76	52.525		
MEMPHIS	WA4KOG	52.01	53.01	N	

VIRGINIA REPEATERS

2-METERS

ALEXANDRIA	WD4PDP	146.055	146.655	M	
ALEXANDRIA	W4HFH	147.915	147.315	M	
ALTAVISTA	WA4ISI	146.055	146.655	N	
ARLINGTON	WA4YVN	146.445	147.045	M	
BARREN SPRINGS	K4HZS	146.07	146.67		
BEDFORD	WB4JBJ	147.705	147.105		LR
BERRYVILLE	WA4TSC	147.90	147.30	M	
BLACKSBURG	AB9I	146.115	146.715		
BLAND	N4AZJ	144.75	145.35	N	L
BLUEFIELD	W8MOP	144.89	145.49	N	A
BLUEFIELD	WD8OGY	146.415	147.015	N	PA
BRISTOL	K4ILW	146.07	146.67	N	A
BRISTOL	WDECYZ	146.28	146.88		
BRUMLEY MT	WR4ATJ	146.01	146.61	N	
CHARLOTTESVILLE	WA4TFZ	146.16	146.76		
CHARLOTTESVILLE	WA4TFZ	146.325	146.925		
CHESAPEAKE	N4EFP	146.01	146.61	N	
CHESAPEAKE	N4SD	146.19	146.79		A
CHESTERFIELD	KA4CBB	147.96	147.36		
CLIFTON FORGE	K4QEL	147.90	147.30	N	
COVINGTON	WA4HTI	146.22	146.82	N	
CULPEPPER	WR4BCS	147.72	147.12	M	
DANVILLE	WR4AHG	147.95	147.35	N	
DANVILLE(DCC)	WB4GJG	146.325	146.925		
DANVILLE/WHT OAK	K4WQS	146.10	146.70		
DEWITT	WA4ZOZ	146.43	147.03	N	
DUBLIN	KT4Z	147.78	147.18	N	
DUFFLD/POWLL MT	KA4BHH	146.10	146.70		C
FAIRFAX	W4LBL	146.19	146.79	N	PA
FAIRFAX	K4VYN	146.31	146.91	N	PA
FALLS CHURCH	W4AQD	144.75	145.35	M	
FARMVILLE	WB4NWP	146.31	146.91	N	A
FINCASTLE	W4WIC	146.04	146.64		
FOREST	K4STE	146.16	146.76		A
FRANKLIN	K4SPS	147.90	147.30	N	PA
FREDRICKSBURG	WB4LNT	147.615	147.015		
GALAX	WA4ZIV	144.83	145.43	N	
GALAX	WA4DFH	147.735	147.135		
GALAX/BRIRP MT	N4VL	147.69	147.09		EA
GATE CITY	WD4GTA	147.945	147.345	N	
GRUNDY	K4HWQ	147.92	147.32	N	A
GUM SPRING	KB4GX	147.87	147.27	N	
HAMPTON	K4UMI	145.23	PKET	N	
HAMPTON	WR4ALW	146.13	146.73		
HAMPTON	K4UMI	146.34	146.94	N	T
HAYSI	WR4AWR	147.60	147.00	N	
HAZEL MT	WD4CYZ	146.235	146.835	N	
HILLSVILLE	WD4BTJ	147.975	147.375		A
JONESVILLE	WA4OVC	146.31	146.91		
LEBANNON	N4ATT	144.61	145.21	N	C
LEXINGTON	WA4WBD	146.07	146.67		
LEXNGTN/COLE MT	K4PQD	147.93	147.33	N	
LYNCHBURG	WR4AXO	146.01	146.61	N	
LYNCHBURG	WA4RTS	147.795	147.195		
LYNCHBURG	W4OSH	147.975	147.375	N	PA
MANASSAS	WD4JCE	144.67	145.27	M	K
MANASSAS	W1CRO	146.37	146.97		PA
MARION	N4BIW	146.04	146.64		
MARTINSVILLE	AB4L	147.885	147.285		
MCLEAN	WD4IWG	147.81	147.21	M	R
MT. LK/BALD KNB	K4TUE	146.31	146.91		
NEW MARKET	WB4DAK	146.025	146.625		
NEWPORT NEWS	WB4CTF	147.765	147.165		PA
NEWPORT NEWS	WA4OHX	147.975	147.375		PA
NORFOLK	NE4D	146.10	146.70		
PARKSLEY	WA4TVS	147.855	147.255	N	EA
PETERSBURG	K4SII	147.78	147.18	N	
PETERSBURG	K4ARG	147.84	147.24		TP,
PETERSBURG	K4ARG	147.99	147.39		
PORTSMOUTH	N4PR	146.25	146.85	N	
RADFORD	KC4WA	147.645	147.045		
RICHMOND	W4SQT	144.83	145.43		
RICHMOND	WB4QEY	146.04	146.64	N	
RICHMOND	WR4ACW	146.28	146.88	N	PA
RICHMOND	W4ZA	146.34	146.94		T
RICHMOND	WA4ECM	147.66	147.06	N	
ROANOKE	WB4QOJ	146.145	146.745		LP
ROANOKE	WR4AHT	146.34	146.94	N	AO
ROANOKE/POOR MT	W4CA	146.385	146.985		L
SALEM	W4PDL	146.28	146.88	N	
SOUTH BOSTON	WD4LBM	146.46	146.06		
SOUTH BOSTON	WD4LBM	146.46	147.06		
STAUNTON	WA4ZBP	146.25	146.85		
STAUNTON	W4WRN	147.645	147.045	N	
STERLING	WA4TXE	146.115	146.715	M	
SUFFOLK	WR4AKS	146.40	147.00	N	PA
TAZEWELL	WD4DZE	147.75	147.15	N	
VIRGINIA BEACH	WA4KXV	146.37	146.97		PA

VIRGINIA BEACH	WA4SBC	147.645	147.045	N	
WARRENTON	WB4FJT	147.765	147.165	M	
WARSAW	WA4UAF	147.93	147.33		
WAYNESBORO	W4BLD	147.63	147.03		
WAYNSBR/AFTON MT	W4PNT	147.675	147.075		
WILLIAMSBURG	W4NTG	146.07	146.67		
WINCHESTER	W4RKC	146.22	146.82		
WISE/HIGH KNOB	K4AXO	147.81	147.21		
WOODBRIDGE	WB4FQR	147.84	147.24	M	A
WYTHEVILLE	WA4EMS	146.175	146.775	N	

220 MHZ

ALEXANDRIA	WA4CCF	223.22	224.82	M	
DAN/WHT OAK	K4OAK	223.16	224.76	N	
FAIRFAX	K4GCM	222.34	223.94	N	
FALLS CHURCH	N4CHP	222.22	223.82	M	
FRIES	WA4DFH	222.74	224.34		
ROANOKE/POOR MTN	WB4DBB	223.34	224.94		
SUFFOLK	WA4JUO	222.34	223.94	N	C

440 MHZ

ALEXANDRIA	WR4AAG	439.25	426.27	M	V
ALEXANDRIA	W4HFH	449.60	444.60	M	
ANNANDALE	WR4AOG	444.85	449.85	M	PL
ARLINGTON	K8ZOA	449.00	444.00	M	L
CHARLOTTESVILLE	WA4TFZ	449.25	444.25		
COVINGTON	WA4HTI	447.25	442.25	N	
FAIRFAX	K4JYF	444.75	449.75	N	
FALLS CHURCH	WB8CRK	449.45	444.45	M	L
FINCASTLE	W4WIC	448.75	443.75		
HAMPTON	K4UMI	448.65	443.65	N	
LEXNGTN/COLE MT	K4PQD	449.15	444.15	N	
LYNCHBURG	WB4DBB	449.35	444.35		L
LYNCHBURG	K4HEX	449.50	444.50	N	RB
MANASSAS	WD4JCE	444.225	449.225	M	L
PETERSBURG	K4ARD	449.50	444.50		
PETERSBURG	WA4MRJ	449.85	444.85		
ROANOKE	WR4AFE	447.75	442.75	N	
ROANOKE/POOR MT	W4CA	442.50	447.50		L
SOUTH BOSTON	WB4YWH	447.25	442.25	N	C
STAUNTON	W4WRN	449.95	444.95	N	C
TYSONS CORNER	WB6GUS	448.50	443.50	M	
VIRGINIA BEACH	WA4KXV	449.95	444.95		
WAYNESBORO	W4BLD	449.30	444.30		PA
WAYNSBR/AFTON MT	W4BLD	449.05	444.05		
WOODBRIDGE	WB4FQR	444.90	449.90	M	

6-METERS

ABINGTON	WR4ATJ	52.01	53.01	M	L
ALEXANDRIA	WA4CCF	52.13	53.13	M	P
DANVILLE(DCC)	WB4GJG	52.13	53.13		
FAIRFAX	KA4DCS	52.58	52.48	M	
LEXNGTN/COLE MT	K4PQD	52.01	53.01	N	L
LYNCHBURG	WB4DBB	52.15	53.15		
NORFOLK	W4NV	53.525	52.525	N	
NORTN/HIGH KB	K4LSP	52.01	53.01	N	
SOUTH BOSTON	WB4YWH	52.07	53.07	N	C

10-METERS

CHARLOTTESVILLE	K4RKA	29.60	29.60	N	RBC

SOUTH CAROLINA REPEATERS

2-METERS

AIKEN	N4ADM	147.885	147.285		
ANDERSON/LOCAL	N4SZ	146.37	146.97		PA
ANDSN/SASFRAS MT	W4FVV	146.19	146.79		
BAMBERG	WA4DFP	144.73	145.33	N	
BEAUFORT	KB4CY	146.01	146.61	N	
CAROWINDS	AA4SC	147.78	147.18	N	
CHARLESTON	K4LWS	146.06	146.66	N	
CHARLESTON	K4ILI	146.16	146.76	N	PA
CHARLESTON	W4IVE	146.34	146.94	N	T
CHARLESTON	WB4LET	147.87	147.27	N	A
CHERAW	KA4ABW	147.735	147.135		PA
COLUMBIA	N4EOY	146.07	146.67		
COLUMBIA	K4AVU	146.28	146.88		
COLUMBIA	K4LNU	146.34	146.94		
COLUMBIA	WB4VLY	147.93	147.33		
COLUMBIA	K4LNU	147.96	147.36		PA
DILLON/PEE DEE	NN4N	146.145	146.745		EA
FLORENCE	W4ULH	146.25	146.85		
FLORENCE	WA4ISM	146.37	146.97		PA
FT JACKSON	WB4DCB	146.16	146.76		
GASTON	WB4NEP	144.61	145.21		PA
GEORGETOWN	WD4DMI	147.975	147.375	N	C
GOOSE CREEK	W4NAT	147.78	147.18	N	
GREENVILLE	W4AZT	146.10	146.70		A
GREENVILLE	K4LFO	147.375	147.975	N	PA
GREENVILLE	WR4	147.675	147.075	N	PA
GREENWOOD	WB4UGA	147.765	147.165		PA
GREER	W4IQQ	146.34	146.94	N	
GRNVLE/CSRS HD	W4NYK	146.01	146.61		
GRNVLE/PARIS MT	W4NYK	146.22	146.82		PA
HODGES/GREENWOOD	KB4YF	144.53	145.13	N	
LANCASTER	W4PAX	146.10	146.70		
LANCASTER	WB4BGF	147.84	147.24		
LAURENS	WA4UZA	146.25	146.85	N	A
LEXINGTON	WR4AGK	147.255	146.835	N	
LITTLE MT.	K4AVU	147.81	147.21		
LONG MT	WA4JRJ	147.87	147.27	N	
MARION	W4YLT	146.40	147.00	N	EA
MONCKS CORNER	WA4DDK	147.75	147.15	N	P
MYRTLE BEACH	WD4JMT	146.01	146.61		A
MYRTLE BEACH	WA4YFE	147.72	147.12	N	
MYRTLE BEACH, N	WA4JYR	147.63	147.03	N	PA
N. AUGUSTA	K4FKJ	146.13	146.73		
N. AUGUSTA	K4VF	146.34	146.94		
NORTHWEST SECT.	W4GZL	144.51	145.11	N	P
ORANGEBURG	WR4AQY	147.69	147.09	N	A
PICKENS	WB4YXZ	146.40	147.00		A
PROSPERITY	WB4OCB	147.84	147.24		
ROCK HILL	K4YTZ	146.325	146.925		PA
ROCK HILL	K4YTZ	146.43	147.03		PA
ROCKY SPUR	KS4I	147.885	147.285		
SIMPSONVILLE	WA4LDP	146.13	146.73		
SIMPSONVILLE	WA4SDT	147.75	147.15	N	R
SPARTANBURG	K4JLA	147.69	147.09	N	PA
SUMMERVILLE	WR4AUV	146.19	146.79	N	
SUMTER	WB4AFR	146.04	146.64		
SUMTER	WA4UMU	147.615	147.015		A
SUMTER	W4VFR	147.66	147.06	N	
WHITE HALL	W4BWZ	146.31	146.91		

220 MHZ

COLUMBIA	N4EOY	222.30	223.90		
EASLEY/SASFRS MT	KJ4X	222.46	224.06		
PICKENS/CSRS HD	WB4QHF	222.54	224.14		

440 MHZ

CHARLESTON	N4SC	449.10	444.509	N	T
COLUMBIA	KC4YI	449.10	444.10		
ROCK HILL	KA4RFA	442.25	447.25	N	

WEST VIRGINIA REPEATERS

2-METERS

ALDERSON	WR8AKZ	146.13	146.73	N	
BECKLEY	WD8POF	144.77	145.37	N	LA
BKLY/FLAT TOP MT	K8BO	146.25	146.85	N	A
BLUEFIELD	W8MOP	144.89	145.49		A
BOLT MT	WB8LVH	144.57	145.17	N	L
BRIDGEPORT	WR8ALC	147.705	147.105	N	EA
BRIDGEPORT	K8VNQ	147.72	147.12		EAL
BUCKHANNON	K8WYH	146.25	146.85	N	
CHARLESTON	WR8AER	146.22	146.82	N	
CHARLESTON	WB8CQV	146.28	146.88	N	
CLARKSBURG	WB8ZVS	146.22	146.82	N	A
CLARKSBURG	WR8DTM	146.50	52.525	N	RB
COAL MTN	WB8KAD	146.12	146.72	N	A
COAL MTN	WB8OEC	147.75	147.15	N	
COTTAGEVILLE	WR8AKV	146.31	146.91	N	
DUNBAR	K8VKI	147.72	147.12		
ELKINS	WR8AOH	146.04	146.64	N	
FAIRMONT	W8SP	146.31	146.91		
FRANKLIN	W3RUA	147.945	147.345		
GRAFTON	K8VNQ	147.975	147.375		L
HUNTINGTON	WB8EZR	146.04	146.64	N	
HUNTINGTON	WR8AGH	146.16	146.76	N	A
HUNTINGTON	KA8BKX	147.90	147.30	N	
KINGSTON/LICK KB	W8EG	144.87	145.47		
LAYLAND/MANN MT	N8BZS	144.71	145.31	N	L
LEON	WB8NMT	147.78	147.18	N	
LOGAN	WD8KWC	144.63	145.23		
LOGAN	WA8ZLR	146.09	147.11	N	O
LOGAN	WR8ADD	146.37	146.97	N	
MADISON	KA8JYR	146.06	147.06	N	TA
MARMET/BEE MT	WA8YDF	144.53	145.13	N	
MARTINSBURG	WB8VUZ	147.855	147.255	N	
MCMECHEN	WA8ULB	146.31	146.91		
MCMECHEN	N8CFX	147.75	147.15		
MORGANTOWN	K8LG	144.83	145.43		L
MORGANTOWN	WB8YZT	146.085	147.955	N	
MORGANTOWN	W8CUL	146.16	146.76		LPA
MULLENS	WR8AKX	147.63	147.03	N	LA
NEW MARTINSVLLE	WR3ABY	146.34	146.94	N	
OAK HILL	W8GH	146.19	146.79		PA
PARKERSBURG	WA8CRW	146.37	146.97		PA
PARKERSBURG	WD8AXY	147.99	147.39		
PARSONS	K8VNQ	144.73	145.33		EAL
PIE HORSE MT	N8APH	144.67	145.27	N	A
POINT PLEASANT	W8KNM	147.66	147.06	N	
PRINCETON	WB8NRK	146.46	147.06		A
RAVENSWOOD	WD8JNU	146.07	146.67		
RAVENSWOOD	WD8JNU	146.10	146.70		R
RICHWOOD	K8VKB	146.34	146.94		
SCOTT DEPOT	K8SLI	147.87	147.27	N	A
SPENCER	WA8SAK	146.01	146.61	N	
ST ALBANS	WB8GDY	146.40	147.00		
ST ALBANS	K8BCH	147.975	147.375		K
TERRA ALTA	WB8PHU	147.60	147.00		PA

WEIRTON	KC8JN	146.34	146.94	A
WELCH	WB8SXZ	144.85	145.45	
WHEELING	W8YFX	144.59	145.19	N
WHEELING	W8JDH	146.16	146.76	N

220 MHZ

HUNTINGTON	KA8BKX	222.54	224.14	N
KINGSTON/LICK KB	W8FG	223.14	224.74	

440 MHZ

KINGSTON/LICK KB	KA8EMX	449.80	444.80	N
MORGANTOWN	K8LG	449.70	444.70	L
MORGANTOWN	W8CUL	449.80	444.80	PA

GEORGIA REPEATERS

2-METERS

ADAIRSVILLE	WB4LRA	146.085	146.685	
ALBANY	WR4ADM	146.10	146.70	
ALBANY	W4MM	146.13	146.73	
ALBANY	WR4ANB	146.22	146.82	
AMERICUS	WR4AQH	147.87	147.27	
ASHBURN	WA4NTF	144.63	145.23	
ASHBURN	K4QT	147.285	147.885	
ATHENS	WA4BKF	146.13	146.73	
ATHENS*	K4TQU	147.375	147.975	
ATLANTA	NC4E	144.69	145.29	
ATLANTA	WB4LBM	144.71	145.31	
ATLANTA	WR4ABE	146.04	146.64	T
ATLANTA	W4DOC	146.22	146.82	
ATLANTA	WR4ABC	146.37	146.97	
ATLANTA	WR4ARK	146.40	147.00	PA
ATLANTA	K4SMX	147.795	147.195	
ATLANTA	W4LUZ	147.855	147.255	
ATLANTA/BELL*	W4PME	144.81	145.41	
ATLANTA/GA TECH*	W4AQL	144.55	145.15	
AUGUSTA*	W4ALK	147.72	147.12	
AUGUSTA*	N4BMA	147.78	147.18	R
BALDWIN	WD4NHW	147.78	147.18	
BLAIRSVILLE	WA4EZN	147.70	147.10	
BRUNSWICK	K4TVE	146.13	146.73	
BUFORD	WD4JXR	147.075	147.675	P
BUFORD	WD4JXR	147.87	147.27	
CANTON	KE4PN	144.67	145.27	
CARROLLTON	W4FWD	146.04	146.64	
CEDARTOWN	W4CMA	147.72	147.12	
CLEVELAND	K4FOW	144.69	145.29	
CLEVELAND	K4FOW	147.015	147.615	
CLOUDLAND	N4AHE	147.225	147.825	
COHUTTA-RTTY	W4KAU	146.46	147.06	R
COLUMBUS	WA4QHN	146.01	146.61	
COLUMBUS	N4BJZ	146.28	146.88	
CONYERS	WB4SLZ	147.81	147.21	
COVINGTON	WA4ASI	146.925	146.325	
CUMMING	K4BYK	147.75	147.15	PA
DALLAS	K4DVJ	146.25	146.85	
DALTON	N4BZJ	144.63	145.23	
DALTON	N4BZJ	144.65	145.25	
DALTON*	KA4WIZ	147.315	147.915	
DECATUR*	W4VTA	144.51	145.11	
DOUGLASVILLE	KB4EO	147.96	147.36	
DUBLIN	WA4HZX	147.96	147.36	
FAYETTEVILLE	K4UWN	146.685	146.085	
FOLKSTON	K4DMK	146.19	146.79	
FOREST PARK	K4KQK	144.65	145.25	
FORSYTH	WR4AQA	147.315	147.915	
GAINESVILLE	WD4IWJ	146.31	146.91	
GAINESVILLE*	W4NSO	146.07	146.67	A
GRIFFIN	WB4GWA	144.79	145.39	
GRIFFIN	WR4AIV	146.31	146.91	
GRIFFIN	WR4AEA	146.43	147.43	
HAMILTON	WB4ULJ	144.59	145.19	
HAMILTON	N4GDG	146.835	146.235	
HAMILTON-RTTY	K4ACH	144.77	145.37	
HAMPTON	WA4DIW	144.57	145.17	
HAPEVILLE	WR4ABN	147.63	146.03	
HARTWELL*	KY4T	146.895	146.295	A
IRWINTON	WB4NEG	147.84	147.24	
JASPER	W4OOM	146.10	146.70	
JESUP	WA4EQL	146.07	146.67	
JONESBORO	WA4DIW	144.57	145.17	
JONESBORO	WA4OGE	144.73	145.33	
JONESBORO	W4BOC	144.85	145.45	
KENNESAW	WB4UPC	144.83	145.43	
LAGRANGE	WR4	146.40	147.00	
LAGRANGE	WB4BXO	147.93	147.33	
LYONS	K4HAO	146.22	146.82	
MACON	WB4OLL	144.83	145.43	
MACON	W4BKM	146.06	146.66	
MACON	K4IIA	147.66	147.06	
MARIETTA	WB4KJB	146.13	146.73	
MARIETTA	W4BTI	146.28	146.88	
METTER	W4TYM	147.645	147.045	
MILLEDGEVILLE	KA4WOF	144.51	145.11	A
MILLEDGEVILLE	WB4DOJ	146.10	146.70	
MOULTRIE	WD4KOW	146.19	146.79	
NEWNAN	K4SEX	144.53	145.13	
NEWNAN	K4SEX	146.19	146.79	
PRESTON	W4TOV	146.385	146.985	
QUITMAN	WA4NKL	146.28	146.88	
RINGGOLD	WR4ABZ	146.715	146.115	
RIVERDALE	WA4EPK	144.61	145.21	
ROME	W4VO	146.34	146.94	
ROME	K4HNM	147.30	147.90	
ROSWELL	N4CLA	144.87	145.47	
SANDY SPRINGS	WB4CPL	144.75	145.35	
SAVANNAH	K4LNX	144.63	145.23	
SAVANNAH	K4NLX	144.63	145.23	
SAVANNAH	K4NLX	146.10	146.70	PA
SAVANNAH*	W4HBB	146.28	146.88	
SAVANNAH*	W4HBB	146.37	146.97	N A
SMYRNA	WA4YUR	144.61	145.21	
STATESBORO	K4MEF	147.81	147.21	
STONE MTN	W4BOC	146.16	146.76	
SVK CRK/MT ALTO	K4HNM	147.90	147.30	
SWAINSBORO	K4VYX	146.19	146.79	
THOMASTON	K4IMK	147.99	147.39	
THOMASVILLE	K4UFM	147.66	147.06	
TOCCOA*	KA4DIP	147.93	147.33	PA
VALDUSTA	W4APS	146.16	146.76	
VALDUSTA	WA4SMH	147.135	147.735	
VIENNA	WA4RWS	144.89	145.49	
WARNER ROBBINS	WB4BDP	146.01	146.61	
WARNER ROBBINS	W4HON	146.25	146.85	
WARNER ROBBINS	WR4AZP	147.90	147.30	
WAYCROSS	WR4AMK	146.04	146.64	
WEST BROW	KC4EV	147.81	147.21	N
WRIGHTSVILLE	WA4RVB	146.34	146.94	

220 MHZ

ATLANTA	KK4C	223.22	224.82	PA
CANTON	WB4UPC	222.34	223.94	
CANTON	WB4UPC	223.06	224.66	
KENNESAW	WB4UPC	222.52	224.12	
KENNESAW	WB4UPC	223.34	224.94	

440 MHZ

ALBANY	WA4GKI	439.25	427.25	V
BUCKHEAD	WA4YNZ	444.60	449.60	
COLUMBUS	WA4QHN	449.20	444.20	
KENNESAW	WB4IXF	449.50	444.50	
STONE MTN	W4BOC	444.25	449.25	
WARNER ROBBINS	WD4ASB	444.50	449.50	

6-METERS

MARIETTA	WB4UPC	53.05	52.05	

10-METERS

ATLANTA*	KE4IO	29.52	29.62	

EAST KENTUCKY REPEATERS

2-METERS

ASHLAND	WR4ACQ	146.34	146.94	
ASHLAND	WR4ALH	147.84	147.24	
BETSY LAYNE	WA4YCU	146.035	146.635	
BLACK MOUNTAIN*	NQ4C	147.94	147.34	
ELKHORN CITY	WR4AWR	147.60	147.00	EAD
GRAYSON	N4BDX	144.79	145.39	
HAZARD	K4VHF	146.07	146.67	
JENKINS	WD4PDJ	147.99	147.39	
LOUISA	WA4SWF	146.13	146.73	
MAYTOWN	N4ESP	146.28	146.88	O
MOREHEAD	K4GFY	146.31	146.91	
PANTSVILLE	WB4PLK	147.63	147.03	
PIKEVILLE	KA4BOH	146.25	146.85	
PIKEVILLE*	KA4BOH	144.59	145.19	O
PIKEVILLE*	N4ETG	146.19	146.79	PA

YOUR STATE DIRECTOR OR HIS ASSISTANT CAN BE OF VALUABLE SERVICE TO YOU – CONTACT HIM FOR HELP IN COORDINATION

WEST VIRGINIA NOTES

By: Ted Wolfe, WD4KHL

computer technology and the use of digital signals that will make "digipeaters" popular. And from my reading I understand that can be accomplished via a simplex repeater (a contradiction of terms).

We could then let computers talk to each other in their own language over radio. Many such contacts could be run through a "digipeater" as each transmission on burst lasts only about one second.

I'd like to see something on the subject in the **Journal** so those of you with a technical bent should write up something and send it into Wayne. In a recent Director's letter Wayne said he needed more support in the way of articles and material for the **Journal.** I'm trying to do my part. But you, as just an Associate Member, can help by sending in items from your clubs or news about repeaters or ham activities in your area.

• • •

"Loud & Clear," the newsletter published by the Jackson County Amateur Radio Club with Robert Morris, WA8CTO, as Editor, won the 1982 Club Newsletter competition in the Roanoke Division of the ARRL for the West Virginia Section.

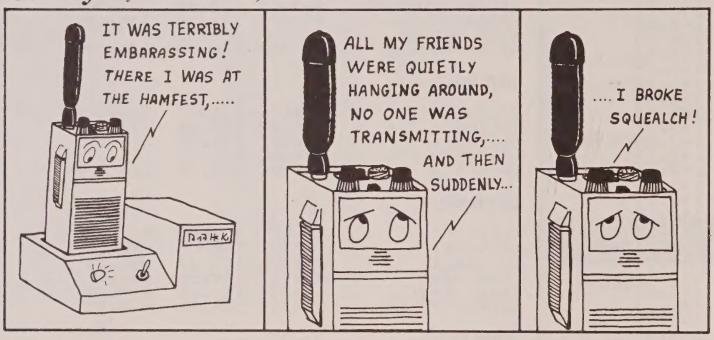
And the "East River Current" put out by J. E. Brock, AA3Q, for the ERARC at Bluefield seems to be growing in size. The 2/83 issue which I received in early March was bulging with information. It will probably be a contender for '83.

• • •

The Roanoke Division ARRL "News" reported the FCC will be in Charleston for examinations in May and November this year. That's down from the previous four times per year of the past. Examinations will be given in Charlotte, NC, on August 2, in Greensboro on September 14, and Roanoke, Va., on October 4.

This long column should keep Wayne happy till next time in August. Any West Virginia amateur with items for me can send it to me at the address on the back of the **Journal.** Don't send them to me instead of Wayne, just let me know too, for I often use material to write up short articles for submission to other ham publication and local newspapers to spread the word on amateur radio.

Stubby *by Fred Hurteau, WD4SKH*


IT WAS TERRIBLY EMBARASSING! THERE I WAS AT THE HAMFEST,.....
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DATES LOCATION PRIZES

WCARS HAMFEST AND COMPUTER FAIR OF 1983

ARRL CERTIFIED

JULY 30-31, 1983

OPENS 9:00 A.M.

BUNCOMBE COUNTY FIREMAN'S TRAINING CENTER

W.C.A.R.S. invites you and your family to participate in the "All New Hamfest and Computer Fair of 1983". We have expanded both the days and theme of this years Hamfest to include computer operations in the growing field of amateur radio in Western North Carolina and surrounding area.

— Dealers from the area displaying the latest in amateur and computer equipment.
— ARRL booth and seminar by Bob Grove (WA4PYQ)
— McElroy Memorial CW Competition.
— Bingo
— RV parking and camping on grounds - Free - Sorry no hook-ups, no dump area.
— Food available on site.
— Free parking.

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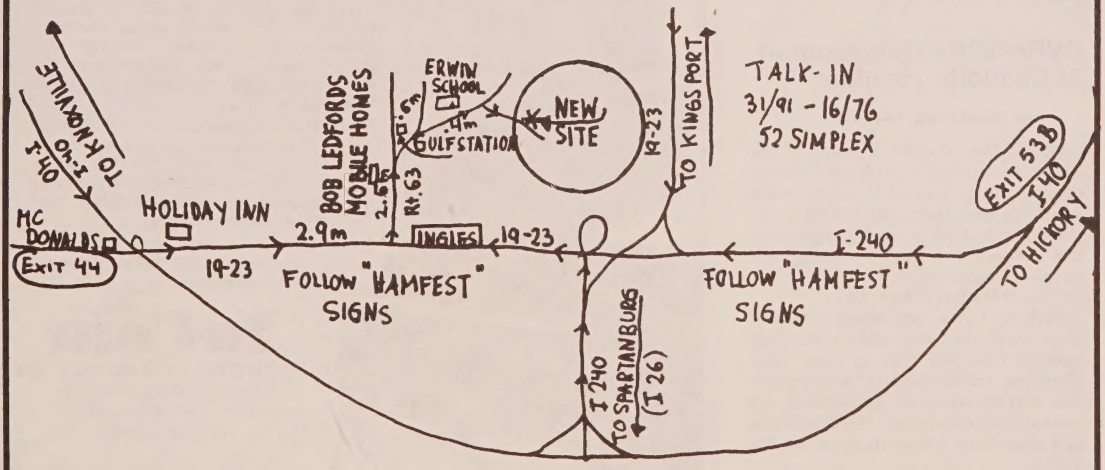

Savannah CARS Members Participate In Superwalk

—by Richard Smith, WB4APG

Superwalk eleven took place on Saturday, March 26, 1983, a beautiful Spring day in Savannah. Superwalk is the annual March of Dimes Walkathon and this year's walk drew over seventeen hundred participants. Over forty walking teams from area businesses contributed to the size of the crowd and collections which exceeded forty thousand dollars.

Savannah Hams provided a radio safety net between the six check points, two poop-out wagons, Red Cross First-Aid van, and the walk organizors, which were the Savannah division of the Association of Life Insurance Underwriters.

The route wound its way twenty miles across Savannah from the sports stadium at the South end of the city, through the campus of Savannah State College. The walk followed a course along the Eastern side of the city to end up at its Northern most point in Emmit Park. The walk then headed South through the historic district and through Forsythe Park, a former Civil War parade ground, and then finally back to the sports stadium.

Each walker was furnished with a paper painters hat which had the route printed on it and as they passed each check point the location was marked with a rubber stamp. Walkers were also provided with free snacks and water. At the half way point, a local scout troup peddled hot dogs, and free drinks were provided by the CocaCola and Pepsi Cola Bottlers in Savannah. At the finish point, a local band provided music (60/S9 at 100 yards) for entertainment while stragglers came in or early birds relaxed on the grass of the parking area.

There were no unexpected emergencies; but because we had a large crowd, we also had more blistered feet and chaffing in various places. All of these were taken care of by the medical staff; both in the First-Aid Van and at the finish point. Poop-out wagons saved many gallons of gas and prevented long waits for those too tired to continue. The average wait was less than thirty (30) minutes.

Those taking part in the Communications Safety Net on the Savannah 145.23/144.63 K4NLX repeater were: Lee Torriente KA4CHN, Tom Langenfeld KA4RKX, Becky Langenfield KA4VSC, Greg Dickerson N4DBS, Gil Kearns W4NNB, Dale Brown KA4NGE, Don Collins KA4BLS, Norman Dennis WA4EJA, Gary Spell KA4OXB, Sarah Smith KA4MXJ, and Richard Smith WB4APG. All participating Amateurs were members of the Coastal Area Repeater Assn. of Savannah.

The seven hour operation went well and the walk organizors were greatful for the assistance provided by the hams. We, the involved hams, were given yet another opportunity to exhibit ham radio and render a service to our community.

CVRA-SERA Represented At Charlotte Hamfest

—by David Ward, KA4LVO

Of all the remarks I heard at the Charlotte hamfest, I must say the most common was "I liked to never found you!" We were there surrounded by the computer dealers. In an effort to remedy this problem, I've started working on a couple of signs which should help you find us at the larger hamfests.

Perhaps it was not being seen that accounts for the lower volume of activity handled this year than in years past. However, we did pick up 14 new members and 42 renewals. In addition, we were able to add a couple of full members and distribute information about the SERA.

At the next hamfest you attend, look around to see if someone is there representing the organization.

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1.5W	80-90W	2C100-2/25
2W-5W	>30W	2C025-2W
2W-5W	>50W	2C050-2W
2W-5W	>100W	2C100-2/25
10W	100W	2C100-10/25
25W	100W	2C100-2/25
25W	100W	2C100-10/25

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Charleston, WV, Host To MARAC 1983 Convention

—by Ted Wolfe, WD4KHL

A number of out-of-state amateur radio operators and their spouses are expected in Charleston, WV, July 6 through 10. They'll be in the Mountain State attending the 15th annual MARAC County Hunters Convention to be held at the downtown Charleston House Holiday Inn, 600 Kanawha Boulevard, East.

MARAC is the Mobile Amateur Radio Awards Club, Inc. The non-profit, unaffiliated club is for mobile operators and County Hunters. It was organized in the early '70's for the purpose of aiding and promoting mobile operations, publishing a monthly newsletter, and sponsoring an annual Convention. It has about 800 active members while there are from 14-to-15 hundred active County Hunters on the air.

The County Hunters congregate on 20-meters at 14.336 Mhz for Phone operations and 14.070 for CW. DX County Hunters are also found operating in the 15-meter band. MARAC offers 17 different awards—almost all that are available to mobile operators. Nearly all the County Hunter awards, except for the one sponsored by CQ Magazine, originate with MARAC.

There are six districts in the MARAC organization. The director of the Great Lakes District is a West Virginian. He is Les Shockey, WB8SNO, Rt. 2, Box 36A, Sandyville, WV 25275.

Les is in charge of arrangements for this year's event. His District is comprised of the states of Indiana, Ohio, Kentucky, West Virginia, Michigan, Pennsylvania and VE3-land in Canada.

The schedule for the major business of the convention is: Friday, 9:00 a.m., Annual CW County Hunters Meeting; and 1:00 p.m., First Annual County Hunters Computer Users Meeting. Saturday, 9:00 a.m., MARAC Executive Committee Meeting, followed at 10:00 by a meeting of the Board of Directors. The general annual meeting will be held for the full membership at 1:00 that afternoon.

In addition to the business sessions a full schedule has been arranged at additional cost for non-business hours of the convention and for spouses or non-ham family members. Included are a Wednesday evening Bar-B-Que Buffet Dinner at 7:00; a tour of two area glass-making plants—Blenko Glass in Milton and Kanawha Glass in Dunbar—beginning at 9:00 a.m. Thursday. The Friday evening highlight is an optional Kanawha River cruise aboard the stern-wheeler P. A. Denny where live entertainment will be featured.

A group photo session for those attending the convention will be held at 4:00 p.m. Saturday. The Convention banquet that evening begins with a cocktail hour at 6:00 and the dinner at 7:00. For the outdoor types there's a Sunday morning 9:00 a.m. option for White-water Rafting on the New River not far from Charleston.

Each year the convention awards an engraved plaque to a ham chosen as the County Hunter of the Year, which is separate from the MARAC awards and can be won only once. Presentation of the award is made during the Convention banquet.

A convention communication station will operate on the Charleston 146.28/88 repeater. Other repeaters available to visitors will be the 146.22/82, also in Charleston, the 146.400/147.000 repeater in St. Albans, and the wide-area Lick Knob machine on 144.87/145.47.

Readers wanting more information about MARAC can write the organization's Secretary, Jon D. Fogdall, N0AGW, at 7120-126th Street Court, Apple Valley, Minnesota 55124.

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Foundation for Amateur Radio To Award 1983-84 Scholarships

The Foundation For Amateur Radio, Inc., a non-profit organization with headquarters in Washington, D.C., plans to award ten (10) scholarships for the academic year 1983-1984. The Foundation, composed of fifty local area amateur radio clubs, fully funds two of these scholarships from the proceeds of the Gaithersburg (MD) Hamfest. It administers, without cost to the donors, two scholarships for the Quarter Century Wireless Association and one each for the Richard G. Chichester Memorial, the Radio Club of America, the Young Ladies' Radio League, the Edmund B. Redington Memorial, the Amateur Radio News Service and the Columbia (MD) Amateur Radio Association.

Licensed Radio Amateurs may compete for one or more of these awards if they plan to pursue a full-time course of studies beyond high school and are enrolled or have been accepted for enrollment in an accredited university, college or technical school. Most of the scholarships require the applicant to hold at least an FCC General Class license or equivalent. The scholarship awards range from $300 to $900 with preference given in some of them to residents of specified geographical areas or the pursuit of certain study programs.

Additional information and an application form can be requested by a letter or QSL/postcard, postmarked prior to May 31, 1983 from the scholarship committee chairman

Hugh A. Turnbull, W3ABC
6903 Rhode Island Avenue
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Don't let your CVRA-SERA membership expire; return your renewal notice as soon as you receive it, or use the application in this issue to renew if your membership is nearing expiration.

The application can also be used for change of address, callsign changes as well as renewals. The Repeater Journal cannot be forwarded to your new address by the post office, and we do not get your forwarding address.

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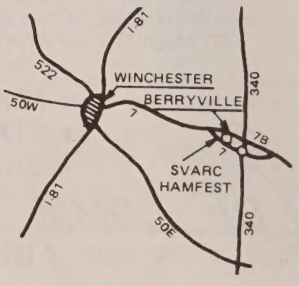

FOR INFO WRITE SVARC BOX 139 WINCHESTER VA 22601

Savannah Hams Help Kick Off Semiquincentenary Year

Savannah ham operators participated in a communications safety net which was organized for the running of the sixth annual Savannah Marathon. Nineteen hundred and fifty runners came from twenty states to run in the full and half marathons that were held recently.

The net was established by the local Savannah R.E.A.C.T. team and had both citizens band and ham components. The hams taking part were Tom Langenfeld KA4RKX, Greg Dickerson N4DBS, Sarah Smith KA4MXJ, Gene Graham WD4IJC, and Richard Smith WB4APG. The last four are also long time R.E.A.C.T. team members.

The Savannah Marathon is the first event of the semiquincentenary (250th) anniversary year celebration for the state of Georgia, and also the first chance to qualify for the famous Boston Marathon.

Communications operators were stationed at each fluid station as well as a ham equipped pace car and a roving C.B. radio equipped motorcycle. There were very few drop outs due to medical problems. There was one heart patient who dropped out during the half marathon, which was not unexpected since that runner was being closely monitored by a medical team.

About two/thirds of the runners only ran the half marathon then they helped swell the ranks of those cheering along the side lines. The citizens band was about what you would expect and the 146.10/70 Savannah Amateur repeater did its usual fine job.

The Savannah Marathon course is very flat but the warm temperatures (mid 60) caused some of the times to be a little on the slow side, although there were some records set. Agegha Abraha (a 21 year old from Ethiopa running out of the Atlanta Track Club) won the mens division in 2:24:58. The womens winner, Colleen Joiner of Lilburn, Georgia in 2:50:45. *—by Richard Smith*

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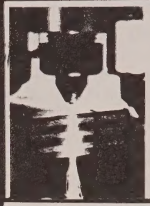

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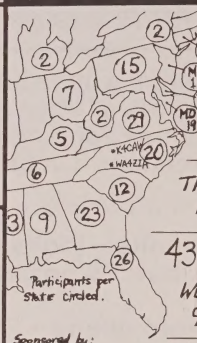

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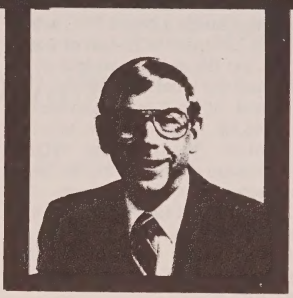

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WP-393

Ice Storm Wreaks Havoc In Mountains-Worse in 27 Years

—by Ken Woodard, WA4BVW

The worst ice storm in 27 years hit the Mountains of North Carolina and bordering States on January 22. On the highest peak in the area, Mt. Mitchell the WA4BVW 59-19 sub band repeater was knocked off the air with a broken Stationmaster antenna. Ice was measured at 6-1/2 inches on the mast. The antenna was mounted inside a 3-inch PVC schedule 80 pipe, mounted to 10-feet of 4-inch steel pipe, yet the massive weight of the clear ice and the winds took it off.

Numerous other 2-way commercial antennas on Mt. Pisgah and Mt. Mitchell were broken. WXL56, the NOAA Weather Station on Pisgah lost its Super Stationmaster in the ice storm. The WESC FM tower at Caesars Head, S.C. toppled, as well as WAGY on Cherry Mountain at Forest City, N.C. lost 2 towers. The W4TMT repeater (2-meter) was also torn down.

Antennas are much more prone to damage by ice, winds, and cold in the mountains than in low areas and are built and supported accordingly. But when Mother Nature swirls up a storm like this one, she is always the winner, regardless of precautions.

Southeastern VHF Society An Experimenters Group

—by Charles Osborne, WD4MBK

The Southeastern VHF Society which banded together in 1979, is basically an "experimenters" type group interested in all forms of research at 220 mhz and up. We are fully SSB/CW oriented on all bands with special emphasis on 70 cm where we started our East Coast 70 cm net in September of 1979. We have year round coverage on the net from New York to Florida on 432.09 mhz SSB/CW.

Over the past three years, we have logged 190 stations in 18 states. The VHF Society boasts over 100 members in 24 states.

The group has a newsletter published quarterly and mailed to all members. The newsletter has many timely tips, news about VHF/UHF and contest schedules, reports on the net and news about members.

Anyone working 220 mhz and above (SSB/CW) who might be interested in checking into the net are invited to do so. The 70 cm net is held each Wednesday night at 9 p.m. EDT on 432.090 mhz. If you would like to join the group and receive the Southeastern VHF Society Newsletter, write: Charles Osborne, WD4MBK, 131 Saratoga Dr., Lawrenceville, Ga. 30245, or phone him at home: (404) 923-6938. He will be glad to give you full information about the group. Annual membership is only $5.00.

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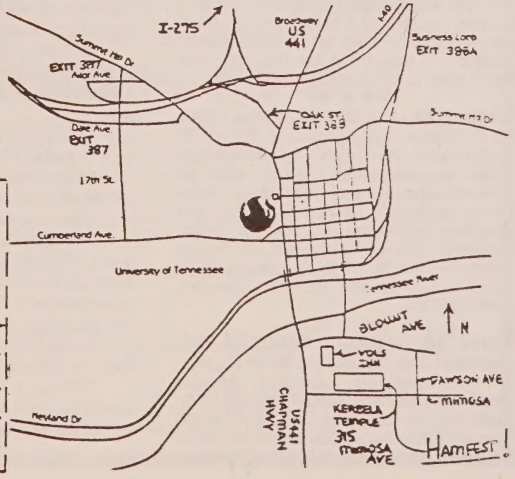

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Georgia News

—Compiled by Lindsay Cleveland, W4IZI

GEORGIA! We have a correction to make. In the November 1982 Journal, it was reported that the Georgia Frequency Co-ordinator had "fallen by the wayside." Well, the long-time co-ordinator C. A. (Sonny) Strawn, WB4JEH, informs us he never really left and is ready to provide assistance to anyone planning a new machine or upgrading an existing one. Sonny is happy that John Robertson, N4BGL, also has volunteered to help with the co-ordination job. Since John has a computer to help keep track of things, his assistance will indeed be valuable. So contact either one of them when co-ordination of a frequency in Georgia is needed. Their addresses are on the back cover of the Journal, Naturally, all CVRA/SERA Directors and Frequency Co-ordinators will be exchanging information with them.

• • •

DECATUR—Welcome to the newest Georgia member of CVRA/SERA! (Number 11 for Georgia) The W4VIA repeater in Decature signed up at the Columbus Hamfest. It is sponsored by the Confederate Signal Corps which supplies emergency communications for the Dekalb County Civil Defense organization. The machine is a GE Prog Line feeding a Taylor co-linear and provides 25-mile mobile coverage as well as 40-mile base station coverage. (Dave, N4AQV)

• • •

ATLANTA—Ditto! The KE4IO 10-meter repeater operated on 29.52-29.62 located in Atlanta was 10th Full Membership from Georgia to join CVRA/SERA. John Schupbach said the machine, depending on propagation is workable generally 100 miles with base stations and 60 miles mobile. The split site machine is linked with 440 mhz. (Mbrship file)

• • •

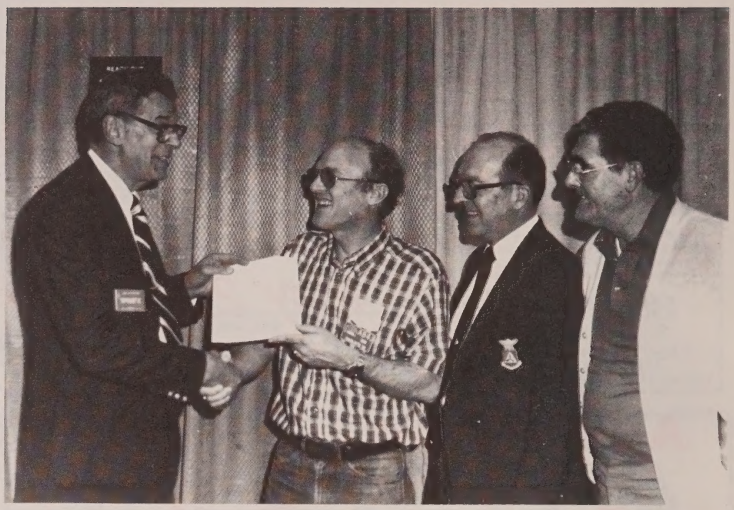
ALBANY—The hams in Albany have decided there is an alternative to driving to some far-away place to enjoy a hamfest. They have decided to start one of their own! So on May 7, they plan to hold the First Annual Albany Hamfest and are looking forward to a good turnout. So if you want to be able to tell your grandchildren, "I was there for the very first one!", plan to be there. (Frank, W4RH)

• • •

HAMILTON—The Chattahoochie Valley RTTY Group has a machine for RTTY enthusiasts that uses an interesting antenna arrangment. Rather than an omni-directional antenna, they have three Cushcraft antennas which give direction coverage to Atlanta, Montgomery, Birmingham, and a fourth pointed to the South to encourage RTTY users in Florida and Southern Georgia. (Bill, K4AOH).

• • •

NOTE TO GEORGIA READERS—The Repeater Journal new publishes regularly the complete updated Georgia Repeater index and also all Georgia Hamfests we are aware of. Tell your friends about the Journal, encourage them to join CVRA/SERA as an Associate Member



JIM BOTSFORD, W4MFK, North Carolina Wing CAP Director of Communications (left), presents a CAP Certificate of Appreciation to the CVRA-Southeastern Repeater Association. Accepting the Certificate is Don Morris (AB4J), CVRA/SERA President. Jack Moorefield (N4INE), NC Wing Chief of Staff, and Wayne C. Williams (K4MOB), Repeater Journal Editor & Publisher assist.

CVRA/SERA Recipient of CAP Certificate of Appreciation

Charlotte NC: The North Carolina Wing, on behalf of CAP communicators in the Middle East Region, took the occasion of the Charlotte Hamfest/Roanoke Division ARRL Convention to present a Civil Air Patrol CERTIFICATE OF APPRECIATION to the CVRA-Southeastern Repeater Association. The CVRA-SERA has been very supportive of Civil Air Patrol primarily through the publication of CAP articles in its **Repeater Journal,** an amateur radio magazine of about 4000 circulation in an area roughly coinciding with CAP's Middle East Region.

Jim Botsford (W4MFK), NC Wing Director of Communications, presented the Certificate to Don Morris (AB4J), president of the CVRA-SERA. Also present for the presentation were Jack Moorefield (N4INE), NC Wing Chief of Staff, and Wayne Williams (K4MOB), Editor and Publisher of the **Repeater Journal.**

Editorial Comment

A Trip Down Nostalgia Lane

Continued from Page 1

working contacts across the world. I worked all States, got my 100 countries, a big box of QSLs and had a ball.

In 1968 I got a job in Greensboro, commuting from Danville. My Amateur operations tapered off and finally by the time I moved to Colfax, N.C. in 1969, I had lost all interest in Amateur radio. My equipment and antennas were still packed up.

In early 1972, my brother Mike (WA4JIY then) told me I ought to get on this new 2-meter FM, but for months I ignored him. I was tired of ham radio.

Finally one day he drove up and handed me an old converted Aerotron 500 single channel transceiver. I was quite familiar with them, we had used them over the years at a radio station I worked for.

The Aerotron had 94-94 simplex in it. I hooked it up, turned it on and went for a week without hearing anything. I put it in my car on a trip to see the inlaws in Martinsville one Sunday, and as we drove up their house, I heard someone call CQ and I answered him. This was my first 2-meter contact. I was hooked. I called my brother the next day, he arranged to get me a transceiver and we installed it in my car.

Since that day, I have been very active in Amateur radio, expanding to 220 mhz. in 1976 and some 440 mhz. in 1981.

Today, I still stick around VHF, enjoying it thoroughly. My low band operations are very limited. Some day I probably will go back, but for now I stay with the "locals" on the repeaters. I've never been so happy in Amateur Radio.

—Wayne C. Williams, Editor

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Coming Events

MAY

14 ..... Durham FM Assn. Hamfest, DURHAM, N.C.
14-15 ..... Hamfest, BURMINGHAM, ALA.
21 ..... Hamfest DALTON, GA.
21-22 ..... Lake Hartwell Hamfest, HARTWELL, GA.
28-29 ..... 17th Annual Hamfest, KNOXVILLE, TN.
29 ..... RVARC Hamfest, ROANOKE, VA.

JUNE

5 ..... Ole Virginia Hams Hamfest, MANASSAS, VA.
5* ..... Tri-State ARA Hamfest, HUNTINGTON, W.VA.
18-19 ..... Atlanta Hamvention, ATLANTA, GA.

JULY

2-3 .... W. Virginia State Radio Conv., JACKSON'S MILL, W.VA.
5-9 ..... Mobile AR Awards Nat'l Conv., CHARLESTON, W.VA.
9-10 ..... John Ross Tradefest, ROSSVILLE, GA.
16 ..... Summer Swapfest, CARY, N.C.
21 ..... Hamfest, ANNISTON, ALA.
24 ..... TSRAC Hamfest, WHEELING, W.VA.
23-24 ..... Hamfest, CHARLESTON, S.C.
30-31 ..... Western Caro. ARS Hamfest, ASHEVILLE, N.C.
31 .... BRATS Hamfest, Howard Cty Fairgrnds., BALTIMORE MD.
31* ..... Jackson County Hamfest, RIPLEY, W.VA.

AUGUST

6-7 ..... Hamfest, JACKSONVILLE, FLA.
7 ..... SVARC Hamfest (Winchester), BERRYVILLE, VA.
13-14 ..... Delta Division ARRL Conv., SHREVEPORT, LA.
20-21 ..... Hamfest, HUNTSVILLE, ALA.
27-28 ..... Hamfest, MONTGOMERY, ALA.
28 ..... East River ARC Hamfest, BLUEFIELD, WVA.
28 ..... Hamfest, MADISON, GA.
28* ..... Hamfest, MORGANTOWN, WVA.

SEPTEMBER

3 ..... CVRA-SERA 2nd ANNUAL MEETING, SHELBY, N.C.
3-4 ..... Hamfest, SHELBY, N.C.
10-11 ..... Central Georgia Hamfest, WARNER ROBBINS, GA.
11* ..... Hamfest, GAITHERSBURG, MD.
17* ..... WCARS II Swapfest, GREENWOOD, S.C.
18* ..... Hamfest, CINCINNATTI, OH.
18 ..... Hamfest, AUGUSTA, GA.
24-25 ..... Greater Louisville Hamfest, LOUISVILLE, KY.
25 ..... Hamfest, GAINESVILLE, GA.

OCTOBER

2 ..... Hamfest, ROCK HILL, S.C.
2 ..... Hamfest, ROME, GA.
7-9 ..... ARRL National Convention, HOUSTON, TX.
8-9 ..... Hamfest & Computer Show, VIRGINIA BEACH, VA.
9 ..... Hamfest, MAYESVILLE, N.C.
15-16* ..... Hamfest, CLEARWATER, FLA.
22-23* ..... Hamfest, CHATTANOOGA, TN.
22-23* ..... ARCS Hamfest, SAVANNAH, GA.

NOVEMBER

5-6 ..... Hamfest, STONE MT., GA.
6* ..... Hamfest, CONCORD, N.C.
26-27 ..... Greater GBO Hamfest, GREENSBORO, N.C.

1984

Sept. 22-23 ..... Roa. Div. ARRL Conv., VIRGINIA BEACH, VA.

(Editor's Note) Hamfest dates marked with an asterisk have not been confirmed to the Repeater Journal. Dates are based on last year's schedule. Clubs sponsoring hamfests who have not sent in their 1983 date should send information to Repeater Journal Editor. Hamfest Ad deadline for Aug. issue is JULY 1.

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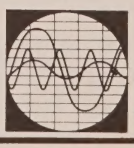

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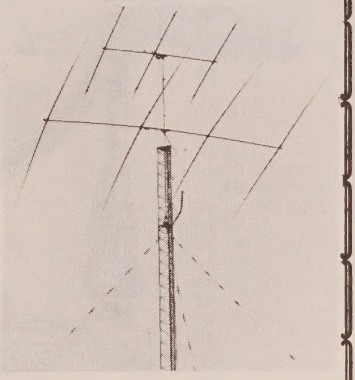

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POOR JOE didn't know the frequencies of the repeaters around him. Help poor Joe, show him the REPEATER JOURNAL - suggest he subscribe... then, Poor Joe will be Happy Joe!

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HAM FEST: The John Ross ARC will sponsor their first annual Trade Fest and Flea Market, July 9 & 10 at the Rossville Civic Center, Rossville, Ga. For further information, write: John Ross ARC, P.O. Box 853, Rossville, Ga. 30741. Come join us!

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NEW! SC QSL Unique incoming Distribution Service. Send #10 SASE for incentive program information. "SQUIDS" (K4CLA), 562-N Oak, Lexington, S.C. 29072-9059.

Gastonia (NC) Hamfest

A spokesman for the Gastonia Hamfest said the event will not be held in 1983, but will return again in 1984 around the 3rd weekend in May. The North Carolina hamfest was scheduled tentatively for May 21 of this year. (Editor)

New CVRA Zip Code

The Greensboro Post Office Box for CVRA-SERA has a new zip code. The Post Office in sweeping changes to ultimately initiate the new 9-digit zip code is beginning by changing certain 5-digit zip codes at this time. The new Zip Code for all Greensboro Post Office Box mail for CVRA-SERA is 27435.

WHERE TO BUY DIRECTORY

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The Trip

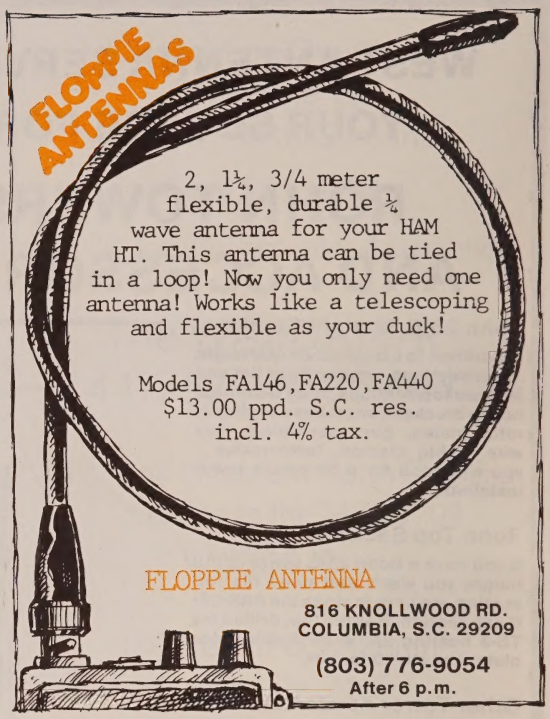
Five hundred miles – a Miami bound family we are,
Mom, Dad, and I, all packed in the car.
His one-quarter wave clamped proudly on top,
Why does this ham of talking fear stop?

His wife at his side, logbook in hand,
records all the stuff on the two-meter band.
Nary a word to the family does fall from his mouth,
"Quick – Let's check that repeater just further down south."

"Hey, Dad! It's me, your number-one son!"
I shout hopefully, as he signs with a "one."
"QRZ," he responds, "Who's calling me?"

Arriving at last we abandon the car,
"There, you see – that wasn't so far.
Oh, by the way, do me a favor and pass my H.T."

—Submitted By Gary Ambert, AI4J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- Notch Filter • Tone Control
- Automatic Sideband Selection
- Speech Compressor
- 12 Volt Operation • CW Sidetone
- One Memory Per Band (except 160mtrs)

Options

EX-241	Marker Unit		
EX-242	FM Unit		
EX-243	Electric Key Unit		
EX-45	9 MHz Xtal Filter	500 Hz	-6dB
EX-54	9 MHz Xtal Filter	270 Hz	-6dB
EX-52	455 KHz Xtal Filter	500 Hz	-6dB
EX-53	455 KHz Xtal Filter	250 Hz	-6dB
EX-44	455 KHz SSB Filter	2.4 KHz	-6dB
EX-238	Built-in type power supply		

Accessories

IC-SM5	Desk Microphone
IC-HM10	Microphone with Up/Down Scan
IC-2KL	500W Linear Amplifier
IC-AH1	All Band Antenna For Mobile
IC-HP1	Headphones
IC-SP3	External Speaker
BC-10A	Memory Backup AC Power Supply
IC-AT100	Automatic Antenna Tuner (100W)
IC-AT500	Automatic Antenna Tuner (500W)

ICOM IC-R70

100KHz-30KHz General Coverage Receiver

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- Ham/General Coverage Ranges
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- Notch Filter
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- Accessory Connector
- Dual Antenna Inputs

Options

FL44	455KHz Crystal Filter 2.1KHz -6dB
FL63	9MHz Crystal Filter 250Hz -6dB
EX257	FM Option
EX261	Transceive Unit (works with IC-720 or IC-720A)

12 Volt Plug Kit

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SP-3 External Speaker

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